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PROSPECT AND RETROSPECT

TWELVE months ago we were writing in a mood of great expectations, in which relief, engendered by the clear shape of victory, was tempered only by the solemn personal anxieties of people whose flesh and blood had still great prices to pay. The Rhine had still to be crossed, but the question was no longer whether it could be done, but how soon and how easily. Following upon the years during which the seeming endlessness of war had borne down upon us, it was small wonder that our spirits rose to the occasion with the bright vision of the great works of peace which stood before us, inviting us to apply those energies which had blossomed so splendidly under the threats and blows of a vicious enemy.

Great events have followed the greatest of events. In the international field grievous disappointments have been suffered. The Peace that was so dearly won has been disturbed by sporadic outbursts in both hemispheres. Peoples lately escaped from slavery for generations to come have lacked the patience to await the measure of freedom the human race deserves, and suspicions between the Great Powers, which comradeship in arms seemed to have allayed for all time, have come again to the surface to lend encouragement to the opportunists. At home, there has been an unmistakeable vote for a new social order, as unlike as possible to that under which the seeds of World War germinated and flowered.

All these happenings rank as world events which would have filled the newspapers to their pre-war capacity, and would have engaged the full energies of statesmen. To meet them among the debris of war presents a staggering task.

The housing problem is no fresh surprise, for it was unsolved in peace time and it remains a major operation in scale with Mulberry, Pluto and scores of gigantic achievements which did not baffle the powers of the nation. It is too soon to say that we have lost our form for meeting great tasks dauntless, and if we had just the natural sequence of cause and effect to contend with, we should counsel nothing but patience and hard work as the certain specific. We should know that building demands labour and materials, and that, with the latter depending on further labour in the manufacturing and distributive fields, the entire demand is composed almost entirely of the human commodity. There, again, prudence would counsel patience before disarming the millions who have fought for the victory of the higher things in human life, and the patience would be the less hard to bear in the fresh memory of valiant achievement. In a word, demobilisation would be the key to all difficulties, and time and speed, a matter of considered judgment, well within the powers of human understanding.

If we believed that this were the true pattern of events, our survey, back and forward, would be a simple one, however great the past glories and however formidable the problems ahead. But in fact we are bound to be conscious that there are other influences at work to complicate the complications, and being conscious of them we are bound to question whether these influences are beneficent and propitious, or whether they threaten the smooth unfolding of a great plan of events.

The only politics with which the mouthpiece of a great industry and a great profession is concerned are those which relate to results. We have no Party label to embarrass our judgment; we look for conditions under which sound building and fine architecture may be produced. We ask only results, in an atmosphere of common justice and fair play.

We have thus to ask ourselves whether we are now shaping towards results, after making all due allowances for the inevitable disturbances of the change from war to peace. If there are any who believe that this is so, we have yet to meet them, whether seeking among the common citizens, the heads of the industry, or even the ranks of the officials. At all hands we experience a sense of frustration arising from some other source than that of mere readjustment.

It is quite clear that some considerable measure of control will need to operate for years ahead, to ensure that first things come first and that the maximum flow is maintained. For this purpose departmental organisation will perforce continue on a large scale. During the war it was on a prodigious scale, and the wheels turned at high speed, however irritating might be the forms and formalities to observe. The sense of urgency was sufficient to ensure that the loose ends of red tape were kept free of the cogs.

Now the urgency is as real, with the difference that it no longer is a matter of sudden death but of the slower and more subtle strangling of the spirit; and the obviousness of the urgency is less insistent. It is at that moment that the evils of bureaucracy rise to the surface, and forms and routine, kept within some reason by the Luftwaffe and the "V" weapons, assume a greater importance than that of natural cause and effect.

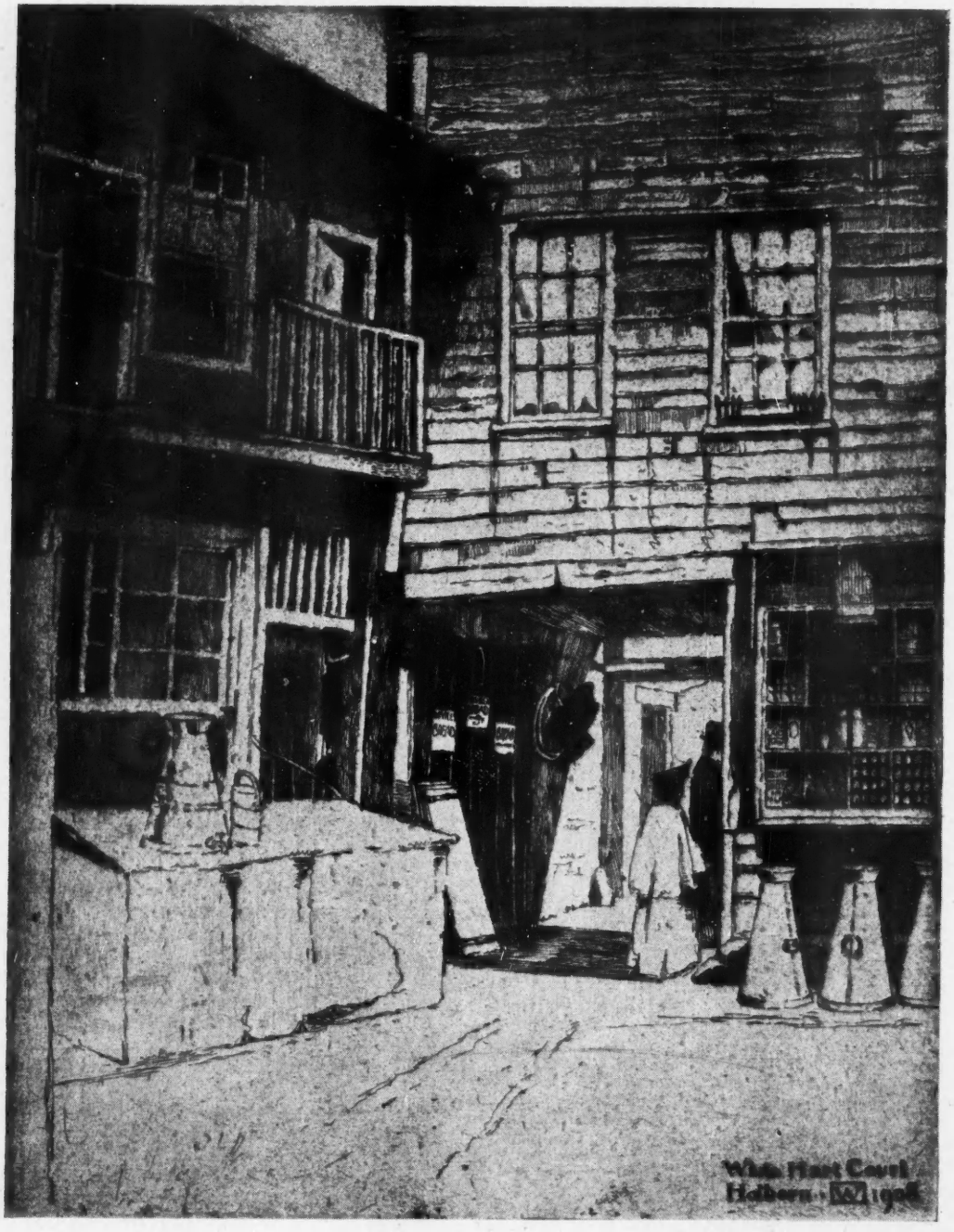
At all hands we learn of the sudden growth of official interference and obstruction to alarming degrees within the past few months, and without sign of increasing wisdom and discretion. Little progress has been made with temporary housing. The programme of permanent building struggles through its initial stages, suffering from the inevitable shortages but chiefly from a shortage of consistent policy.

In parallel with this apparent ineptitude we hear of numerous cases where men arrive in the East, after long voyages, only to be flown back home again for their release a few days later, while the shortage of transport is urged as the main cause of their slow return to civil life.

We say without hesitation that unless we can devise some common-sense way of running the departments of control, as our first and most important task for the New Year, the machine will continue to falter at a time when it should be running at full speed, for 24 hours a day and for years to come.

But we must not forget the traditional feeling of the season, in the irritations of the moment, as our young men return to their drawing-boards and practices. To them we wish a great future, and to them we shall look for the chief inspiration as we gird ourselves for the great rebuilding.

Through the young men, largely, we surmounted the trials and difficulties of war; by their enthusiasm and initiative we look with confidence to triumphing over the difficulties, natural if disappointing, of establishing peace.



WHITE HART COURT, HOLBORN.

From an etching by Mr. W. H. Ansell, M.C., P-P.R.I.B.A., whose Reminiscences begin on p. 28 of this issue.

THE INDUSTRY LOOKS AT 1946

NEW YEAR MESSAGES FROM ITS LEADERS

From the President of the R.I.B.A.

SIR,—I think one of the greatest needs of the Building Industry in the coming year is that of a balanced industry.

When we speak of a balanced industry, I assume it is one in which all the sections which go to make up the complete industry should have an equal opportunity to follow the craft for which they have been trained, and that manufacturers, whose products have been designed and developed for a variety of purposes in all kinds of buildings, should equally have an opportunity of manufacturing and selling the articles for which their businesses were founded and developed.

While there will undoubtedly be a very great need for houses, the people of this country ought to be advised that, having regard also to the needs of those manufacturing and export trades on which the country's livelihood will depend, the national interest requires that in some measure building work, other than house-building, will need to proceed concurrently with the housebuilding programme.

Unfortunately, complete figures are not available, but we do know that in the year before the war, 1938, figures based on plans approved in 146 towns showed that the value of certain classes of buildings were :—

Type of Building.	*£ millions.*
Dwelling-houses	60
Factories and workshops	7·47
Shops, offices, warehouses and other business premises	9·50
Churches, schools and public buildings ...	9·50
Other buildings, alterations and additions to existing buildings	11·13

which means that dwelling-houses took 62 per cent., industrial and commercial buildings 17 per cent., and other buildings 21 per cent., of the total volume of building work.

As far as I can gather, statistics show that the employment figures of the various craftsmen and building labourers approximately bear out this proportion, but that is not the whole story: What about the ancillary trades and industries? First, there is the manufacturing and quarrying industries which are directly and almost entirely dependent upon building activity. They employ some 400,000 workers, of which it is estimated that at least 200,000 would not normally be employed on work in connection with housing.

Then there must be many thousands of workers in general engineering and equipment foundries, and manufacturers of all kinds of machinery and equipment which find their place in some kind of structure, and quite a large proportion of these articles would be needed in buildings other than those of a domestic character.

I do not think it would be too much to say that, apart from the three or four hundred thousand building operatives, there are at least another half million workers whose normal products are dependent, or very nearly dependent, upon buildings other than houses.

It must be obvious that, if the whole of our industry is concentrated on a house building programme, a considerable proportion of the trades detailed above will not be able to find employment, but there is another equally serious matter which would result from this concentration upon housing, *i.e.*, the effect upon the craftsmen themselves if, following their inactivity during the war years, the opportunity of exercising their skill was denied them for a further period.

The industry includes a large number of skilled workers in hardwood joinery, carvers, fibrous plaster-workers, masons, metal workers, tile-and-terrazzo-layers and many other highly skilled craftsmen, all of whom fill a necessary place in our great industry, and whose skill will be again required if we are to rebuild Britain in the way I am sure all of us wish to see it rebuilt. And it is not only their skill. What about the young men who are to follow and take their place? Where are they going to find the opportunity of learning their crafts?—for I do not believe they can be completely learnt in a technical school or training centre. This argument, of course, applies not only to the operative on the site but to the skilled craftsman in all the ancillary trades.

What can we do to remedy this situation? We all realise the urgent necessity for houses. It should not be a political matter. There are few of us to whom the problem has not been brought home in our families and I, for one, realise that for a time at least a very large proportion of our activity will have to be devoted to this end, but I think it is equally essential that a certain definite part of the industry must be allocated to other classes of building operations.

And as we looked ahead during the war years and planned our production accordingly, so I would like to see a full and comprehensive survey of the situation, a survey in which the Government themselves take a part, bearing in mind not only the present urgent need but the ultimate demands which will be made upon our industry. It is not only the allocation of our existing man-power that we are concerned with but the recruiting and training of technicians and craftsmen to meet a building programme which is staggering in its potentialities.

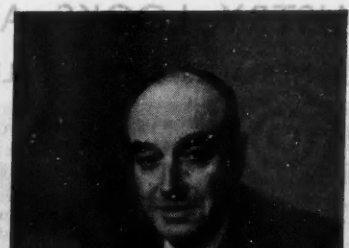
PERCY THOMAS.

SIR PERCY THOMAS, LL.D.
(President, R.I.B.A.).

MR. HOWARD ROBERTSON, F.R.I.B.A.
(President, B.I.N.C.).

MR. R. H. FRANCIS, F.S.I.
(Chairman, Quantity Surveyors' Committee)

MR. J. W. STEPHENSON, C.B.E., J.P.
(President, N.F.B.T.O.).



MR. G. W. BUCHANAN, C.B.E.
(President, National Federation).

MR. KENNETH CAMPBELL, A.R.I.B.A.
(President, A.B.T.).

From the President of B.I.N.C.

SIR,—In thankfulness for the overcoming of our immediate national dangers, the most effective expression of the building industry in the New Year might take this form :—

1.—For every member of the industry, from the labourer to the architect, to recognise that he or she will be engaged, at least for the next year or so, in the greatest direct social task the industry has ever been called upon to undertake. This bias in favour of purely social ends, *i.e.*, Housing, rather than of the wider and more economic ends of commercial development, imposes a direct personal responsibility on every member of the industry. The obligation on each one of us is to give of his best to overtake the lag in providing national shelter and so enable the resources of the industry to pass on to the fundamental task of economic rehabilitation through the provision of building, both at home and abroad, to meet the need to expand our home and overseas markets for goods and services.

2.—To make and maintain such contacts with the policy-forming agencies of Government as will ensure such a measure of balanced building activity as to make possible full employment of all persons of skill within the industry. The provision of houses as such will not necessarily provide homes on the same scale. Shelter is one thing, home life is another; and an even more important one. The prerequisite of a good home life is good employment for all members of the family. Good employment means above all things congenial work. In the case of the more highly skilled arts and crafts of building it means employment on a type of work which is not found in house-building. These higher but lesser-known services permeate the building industry throughout the country. Important as house construction is, it is not possible properly to train apprentices and articled pupils on this type of work alone. Steps must be taken to provide means of training, and the exercise of skill in the higher branches of building, so as to give a genuine feeling of satisfaction in the life's function of thousands of building trade " workers "—used in the wider sense. Otherwise the national position will quickly change from one of social aspiration to one of economic disappointment.

3.—The attainment of the best which the building industry can produce in the national interest depends on the organisation of the industry to meet its tasks. There is no more pressing problem facing the building or any other industry than this one of organisation. By the very nature of its arts and crafts building is a partnership of effort, becoming—in its expression—buildings, an indivisible whole. Yet, in spite of this fact, in the field of social and industrial economics the industry largely remains a disintegrated organism. In such a state it is to be doubted whether it can properly organise for the tasks before it. Organisationally the industry reflects a state of multiple cleavages, often in the interest of mere " paper " status, away from the centre of its respective representative bodies. This state is harmful; it is one of inefficiency, and indicates an absence of full sense of responsibility in relation to the national needs. This somewhat sorry picture is to some extent relieved by two movements within the industry which are in themselves encouraging. One is the undoubtedly high standing in the counsels of the nation of the National Joint Council. The work of this Council, particularly during the war years, has been almost phenomenally successful. All the bodies concerned in it deserve well of the industry as having maintained a grand organism. This Council, however, deals solely with Wages and Conditions as between the employers and the operatives.

The other encouraging item is the fact that slowly but surely the idea of the Building Industry of Great Britain as capable of organising for itself a single representative head, for all of the many matters of common concern and *responsibility*, is gradually taking deeper root.

Judging, however, by the development of the building industry in the Colonies, and to some extent by the set-up of the industry in other countries, it would appear that the ideas behind the constitution of the Building Industries National Council are making somewhat more rapid progress than in the country of its origin. In all quarters, however, there is growing recognition of the fact that only by uniform approach to its common problems, and to its needs, can the best of national ends be served by the building industry in this New Year of 1946.

HOWARD M. ROBERTSON.

From the Chairman, Quantity Surveyors' Committee, C.S.I.

SIR,—We are turning to the New Year with hope and an expectation that our energies are to be spent in the reconstruction and repair of our homes and the places where we work or get recreation.

While our homes will be our first concern, the demands for the other essential buildings cannot be ignored. The demands for the services of the quantity surveyor should therefore be heavy and there should be no doubt that full employment will be attained. This places a great responsibility on the profession to see that the quality of service is maintained, and the changing conditions are faced with a full appreciation of the code of principles laid down for its guidance and a spirit of helpfulness to those restarting after years of interruption.

With the introduction of the Code of Measurement for Small Dwellings, for use in connection with housing schemes, there is real need for care to see that the information given is correct and adequate for a close estimation of the cost of the work.

Perhaps the most urgent question for the industry at present is to get the maximum output from the available man power so that the great arrears in building and repairs

can be overcome. The National Joint Council for the Building Industry have recognised this need and have suggested lines of action to be taken which should help in this direction. Quantity surveyors are, I am sure, ready to assist the industry in any way in which their services and special qualifications can be utilised to advantage to obtain this objective.

There is one way in which the elimination of waste can be achieved and that is by careful planning before the work is started. It is unfortunately true that clients, including local authorities and Government Departments, still do not appreciate enough the extent to which careful preparation in the office will aid organisation and avoid waste at the site. A little time in the office will save a lot of time on the job. Speed in obtaining tenders is not necessarily speed in getting completion of the work.

Now is the testing time for the planning of former years. Let us review and revise those plans to meet the changing conditions by constant collaboration between all sections of the industry. The country is looking to all sections of the industry for a maximum effort, and I am confident that it will not be disappointed if those Ministries which control our activities give us the opportunities for the services we are anxious to give.

R. H. FRANCIS.

From the President of the A.B.T.

SIR,—The great tasks of reconstruction upon which the country is launched in this first year of peace nearly all rely on the building technician for realisation. Housing, schools, hospitals, clinics and factories, without which the new social services would remain a dead letter, depend in the first place on the skill, devotion and output of *all* technicians equally, from the architect and town planner to the contractor's draughtsman.

After the first world war, 20 years of unplanned, anarchic building with the technician acting as the helpless tool of the speculator have resulted in a permanent scar on the face of our countryside and on the balance of our industrial development. The need for new building now is even more pressing; we must speed up our technical planning to meet this need and this imposes a responsibility on the individual technician to give more than he is asked to give—to carry over into the peace the urgency of war. In spite of extensive controls, the drive of individual interests is still powerful enough to jeopardise our present opportunity to correct urban sprawl and unbalanced development.

Although, happily, the Labour Government now in power is setting about the task on the basis of a planned economy understood and appreciated by technicians, the success of its plans very largely depends on the efficiency and co-operation of our local democratic organisations—local authorities and others.

We in the Association of Building Technicians believe that it is here that the building technician must come out much more prominently into public life than heretofore. He alone can see that new ideas of planning, new methods of construction and new standards of equipment are explained to and understood by the public; he alone can see that they are put into operation and that the results of the scientific research now being carried out by the Government are taken full advantage of by those who build.

We believe that in order to give this technical guidance and leadership to the country all technicians—architects, engineers, surveyors, draughtsmen and clerks of works—must learn to understand and co-operate with one another, and this is the particular function of our Association.

Finally, if this country is to maintain its technical supremacy we believe that the technician must have adequate recognition. We believe that his salary and conditions of employment must be greatly improved, particularly in contractors' offices and with local authorities, and that he should be given every opportunity to increase his skill and full responsibility to exercise it.

These are our main tasks for the coming year, which we believe will be a great one in the history of our industry and our country.

KENNETH J. CAMPBELL.

From the President of the National Federation B.T.E.

SIR,—I take an optimistic view of the outlook for the Building Industry in 1946. Why not? Is there not full employment for the industry? And beyond that do there not stretch many long years in which the products of our hands will be in keen demand?

Of course, we shall not be allowed to do exactly as we might like. But could we expect it? After the greatest war in the whole of the world's history could we even suggest a free-for-all and devil-take-the-hindmost? To ask the question is to answer it.

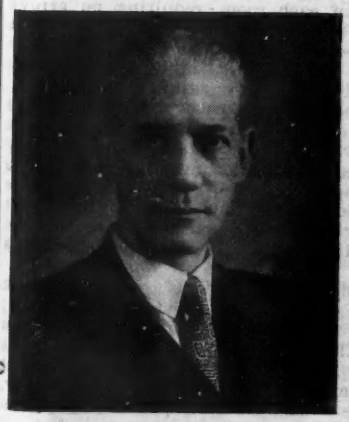
Some of my friends in the industry are a little upset because the Minister of Health sometimes says hard things about builders, and does not always make it clear that it is the minority he is stigmatising and not the majority. Well, we can take it. The Minister knows, as we do, that he himself has passed more than 90 per cent. of our tenders for local authorities without question, and it may be that before the New Year is very old he will be praising us!

Of course, we should like to get rid of some of the red tape with which we are fettered. I am hopeful that this will decrease as the labour force and the supplies of materials increase, and that we shall be free to get on with the job. Mr. Bevan wants the houses; we want to build them. The prospective occupants, the demobilised Service man and his wife, and the bombed-out families, demand that we both get on with them without recriminations. At present building is all under the local authorities. Soon, I hope, the speculative builder, working it may be on slightly different terms from those he enjoyed in a peace-time economy, will be equally hard at work. Costs must come down. Everyone is agreed on that, and I have great hopes that the new Production Committees which we, jointly with the operatives, have set up will find ways and means both of reducing costs and of increasing output.

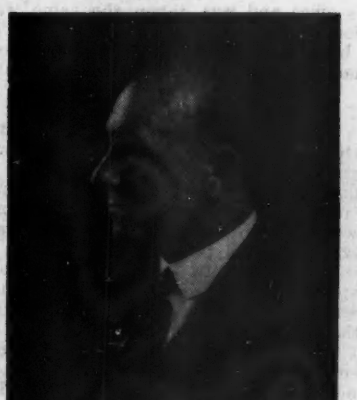
It would be inappropriate not to end with a word of appreciation of the work of the National Joint Council, which throughout its 25 years of service to the building industry has proved its worth over and over again. Thanks to the adaptability of our negotiating machinery, a demand at the end of last year for increased wages was dealt with in such a way that a unanimous decision was reached which not only has been loyally adopted by both sides but has commended itself to all concerned, including the Government.

So I have no hesitation in saying that the building industry is sound at

(*Continued on page 50.*)



SIR DUDLEY PRYKE, Bt.
(President, B.I.D.).



MR. J. L. MUSGRAVE, M.Inst.C.E.
(President, F.A.S.S.).

ARCHITECTURAL REMINISCENCES—No. II.

By W. H. ANSELL

THE reason why elderly gentlemen continue to write reminiscences is a little hard to determine. It cannot be merely vanity; that, surely, has long ceased to interest them; rather is it more likely to be for the pleasure of remembering. Fortunately, the pleasant moments of life have the happy knack of impressing themselves fairly strongly on the memory, while the unpleasant ones are allowed, even encouraged, to fade into a decent obscurity.

The excessive use of the personal pronoun, the first person singular, is supposed to be embarrassing to the average Englishman, but the writers of reminiscences appear to be but little incommoded by this. Perhaps they are not average. They write; others may or may not read, that is their affair.

My own first incursions into the arts, and at the same time into commerce, were two in number. As a small boy of seven years, I got some sheets of rough straw-coloured paper and drew a series of sloop-rigged sailing boats, with a gaff and boom mainsail, and a foresail. They had a considerable sheer forward and lots of rigging; they were also highly coloured. With these in hand, I went alone into the streets of Nottingham, sold the drawings to passers-by at a penny apiece, and returned, to my parents' astonishment and horror, with no less a sum than eightpence.

The art of literature next attracted me. At nine years of age I, as was customary in those days, caught scarlet fever and was taken to hospital, where I stayed for a few weeks. In my convalescent period I wrote a diary in which, with innocent but engagingly indecent frankness, I discussed myself and my treatment, fellow patients, nurses, and the doctors. One of these found the diary one day and read it. To my genuine surprise, it had an instant success. Every doctor who came insisted upon reading it, sometimes two or three at a time, and all found it exceedingly funny for some, to me, utterly unknown reason. When I left I was not allowed to take it away, but a collection was made, and I was presented with eleven sterilised pennies with which to buy another and larger diary.

What, I wonder, would a psychiatrist career-adviser have made of this? Would he have recommended art, literature, or commerce? In any case, he would probably have been wrong, and as there appears to be looming in all this a too favourable opportunity for the comments of the candid friend, let us leave it and pass to reminiscences of a more architectural character.

The Call of Architecture.

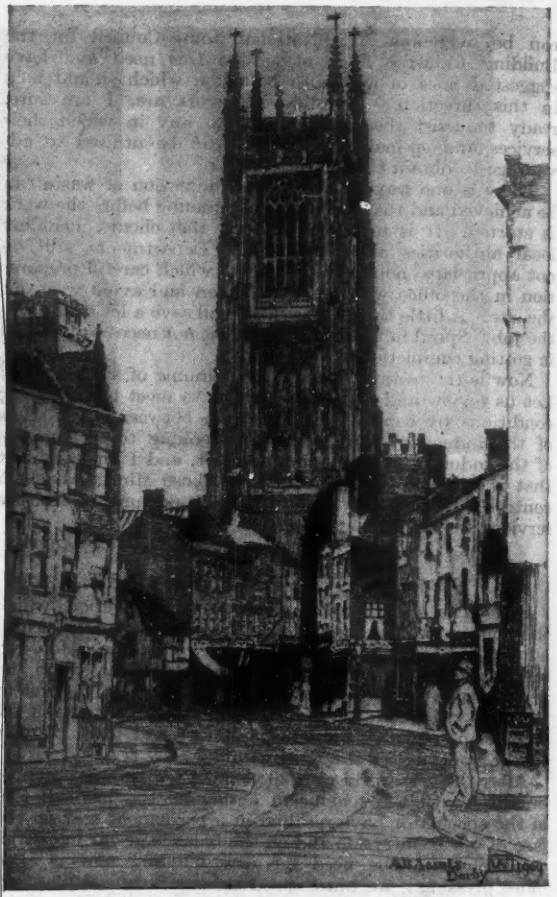
I left school at an early age to work in a design studio in Derby in the day, and the School of Art at night. It was there that Barry Parker and I first met. We learned all the technicalities of carpet and wallpaper design, and how to cut paper to a dead-true line with a pair of scissors, but after a few years I decided that I would much rather be an architect, and I was then articled to Reginald Naylor and G. H. Sale.

Naylor had worked in Sir Gilbert Scott's office and was Diocesan Surveyor to the Diocese of Southwell. The practice therefore had a strong Gothic bent; even the houses, many of which were vicarages, had more affinity with the later Gothic revival than with Norman Shaw, while there was but little appreciation of the refinement and elegance of the eighteenth century.

The Gothic training, however, which the work of the office involved was sound and good. It concerned itself not only with details of mouldings, but more, perhaps, with construction and proportion, and, in consequence, the quality of the design of the church work was higher than that of the domestic. Where, however, this was in the Derbyshire vernacular and of stone, it, too, was quite respectable. Haddon Hall was our touchstone, and in the course of my five years in the Derby office I measured up the whole of it, plans, elevations and sections, not excluding the panelling of the Long Gallery and the Hall.

My first job as a new pupil was a little unusual. It was to make a pen-and-ink perspective of a new church from the eighth-scale drawings.

The general procedure of the office was clear-cut and business-like. Sketch plans, working drawings, half-inch details of the whole building and full-sizes followed in ordered sequence.



ALL SAINTS, DERBY. From an Etching by W. H. Ansell.

The full-sizes did not wait until demanded by the builder, but were all prepared as soon as the contract was signed. A roll of ammunition paper many feet long was pinned down to a long drawing table, and first the stone and brick and then the joinery, from the solid frames of the basement doors to the carefully detailed platerack, were set out. There were few or no unresolved matters to be settled later and few unforeseen snags.

In measuring existing buildings a regular system was followed. Two assistants and a boy usually were engaged, the boy to hold the tape, one man to read and call out the dimensions, and one to book. Running dimensions were used, entered at right angles to the point being fixed, taken the same way in each room, requiring no arrows and resulting in a set of sheets which could be drawn out with perfect ease and accuracy by anyone, not necessarily those who had taken the measurements. A quite large building could be, and often was, measured in a day.

The office in my time was perhaps over-pupiled. There were two assistants and six or seven pupils. Sale, the junior partner, who lived up to 1945, was a human, kindly man, who saw the necessity of allowing pupils to improve their knowledge and appreciation of county cricket, while Naylor was less conscious of the importance of this aspect of architectural practice. It was remarkable how often the dates of attractive matches were made to coincide with his visits to distant jobs.

Some of us in the office were voracious readers and took great helpings of authors more or less at the same time; the great English novelists from Fielding and Richardson to Trollope, George Eliot, Meredith and Hardy, essayists like Montaigne, Lamb, Hazlitt (does anyone read Hazlitt nowadays?) Carlyle and Stevenson, Motley and Macaulay, were all read with zest. There was no patronising person to start us talking, and no radio to tempt us to inflict our callow, half-baked opinions on a long-suffering world.

Although Derby itself was then rather a dull town, and I not the least dull of its inhabitants, I was fortunate in having friends who gave me ungrudging help in enlarging my horizon. Walton the librarian, and Pountain a telegraphist, introduced me to many authors I might have missed. Dr. Cranage, till recently the Dean of Norwich, widened my appreciation of Gothic architecture, and Arnold Bemrose, who lived in Friar Gate, a street of gracious eighteenth-century houses, I remember with gratitude and affection.

I think the word "zest," which I have already used, fairly conveys my general impression of my own life in Derby. Charles Todd, who afterwards became a Government architect in Australia, and I worked with zest, played cricket with zest, walked over Derbyshire hills and moors, and read books with zest. At the time we regarded it as merely an interim period, but, looking back upon it now, I see it as a valuable and enjoyable part of my life, in spite of the discontent which made me perhaps too anxious to get away from it.

My reactions to Derby were always tempered by my hero-worship of my cousin, Ernest Gimson. He was some ten years or so my senior, and I saw but little of him, but I stayed with him at Pinbury, and it was in his company that I visited Daneway House and many of the Cotswold villages. He it was who provided most of my introductions when I came up to town looking for a job, and so ensured me an interview and a sympathetic hearing. Lethaby was delighted with my drawings of Haddon, which, of course, he knew well. Ernest Newton advised me to go away from London at once, settle in some nice cathedral town, make friends with the Dean, and live happy ever afterwards; Mervyn Macartney offered me thirty shillings a week, but as John Belcher, whom I saw afterwards, suggested fifty shillings, I joyfully accepted that and entered his office in Hanover Square. Beresford Pite had left Belcher shortly before, and J. J. Joass was in charge. Belcher himself was an urbane and charming personality, and, to one lately arrived from a provincial diet of vicarages, the work in his office was full of interest.

My previous visits had been mostly in the form of hectic single-day trips. Up at 5.30 a.m., train to London, picture galleries in the morning, South Kensington Museum in the afternoon, "Ivanhoe" at the English Opera House at night, St. Pancras for the midnight train, and home again by four in the morning, was a typical programme of a day's visit to London. One week only had I spent there, and that being mostly taken up by R.I.B.A. examinations gave little time for exploration.

But now London was there for the asking, not wearing her heart on her sleeve, but ready to reward a constant lover with all kinds of beauty. A reader's ticket at the British Museum, and Rudolf Dircks at the Institute, helped me to compile a list of books on London to begin upon, and I then waded in.

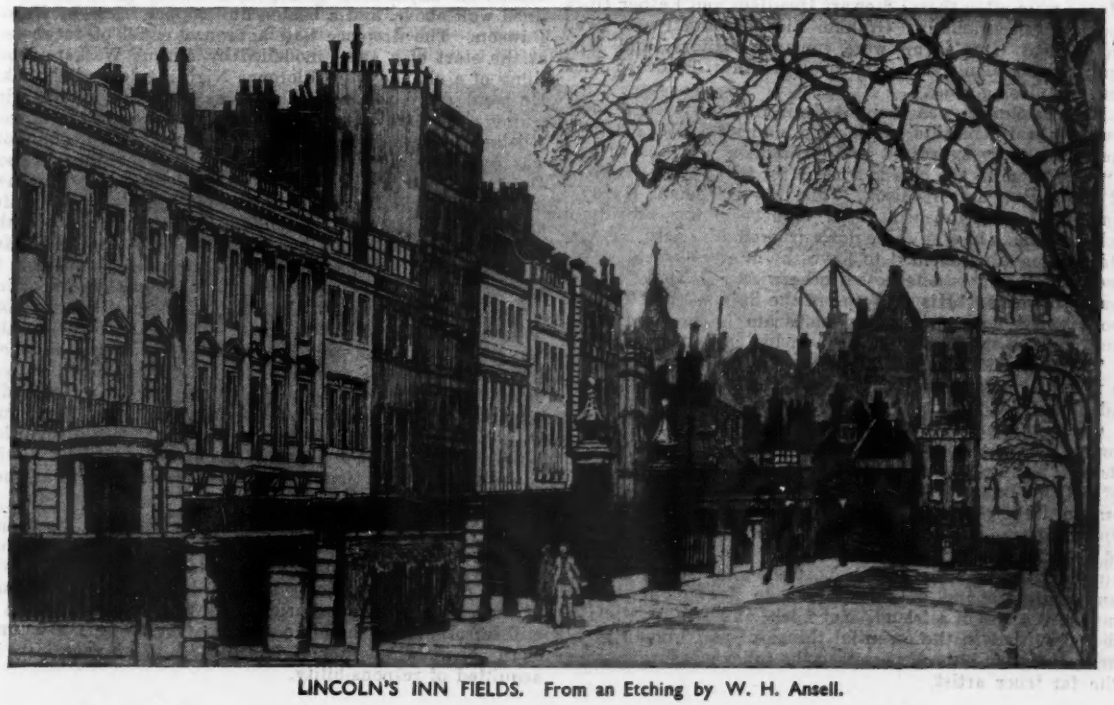
With the reading, of course, went the exploration. I walked one day from Waterloo Bridge to Rotherhithe and the Surrey Docks, taking everywhere the road nearest the river whatever it might be, investigating every alley and stair that led to the water and every possible wharf that gave a view of the North side. I did the same on that side, walking from the Tower to Millwall by Wapping and Limehouse. I was surprised and disappointed that there were so few places from which Londoners could see their own river, and that those were mostly of a squalid, oozy, uncomfortable kind.

There were still, however, in the 1890's, interesting, picturesque riverside buildings and the busyness of a foreshore life. There were boat-builders in Rotherhithe, harbour-masters' offices at Millwall, and every kind of queer public-house, in one of which I met the lighterman, who confided to me that his landlady, whom apparently he disliked because of her unreasonableness over a little matter of rent, was "a blot on the escutcheon of Gawd."

I first lived in Fulham with two old Derby friends, E. W. Gregory, a water-colour painter, and designer, and Edgar Dolman, who was then at St. Thomas's. Space restrictions forbid my telling of Mrs. Hardes, our landlady, a shrewd, humorous, kindly Londoner, nor the story of how she routed the coalmen, which became a Fulham classic.

Charles Lamb then found me a lodging, for, on going along Holborn one day, I saw "Featherstone Buildings," which reminded me at once of Lamb's godfather, that "tall, grave person," the "most gentlemanly of oilmen," Brinsley Sheridan and Maria Linley. It was he who for many years lighted the orchestra and various avenues of Drury Lane Theatre with his oil lamps, receiving for remuneration merely a liberal supply of free tickets from Sheridan.

Featherstone Buildings had a narrow entrance from Holborn and at the back into Bedford-row. It widened out in the centre and was lined with typical early eighteenth-century houses with well-proportioned windows and carved door-heads. I went in, found a large white-panelled room to let as a bed-sitting-room, and took it at the not excessive rent of nine shillings a week. The house was destroyed in the bombing, together with most of Featherstone Buildings.



LINCOLN'S INN FIELDS. From an Etching by W. H. Ansell.

It was there I met George Wilson—poet, cricketer, and fastidious *litterateur*—who became one of my greatest friends, and remained so up to his death. The casual way in which life determines some of our friendships is well known, but in this case I think that Lamb must have had some influence in leading me to Featherstone Buildings and George Wilson, a man after his own heart.

In the last war I carried Wilson's cricket poems with me to the end. In March, 1918, two or three of us were in the ramparts at Ypres. It was a sticky night—two shells had already hit the brick wall on the moat side, and another had uprooted a tree above our heads. I read "An Invitation to Lord's":—

Now that the sun has rent his veil of gray
And on the greensward plays with flashing chords,
From books and shaded hours let us away,
Let us to Lord's!

and the quatrain—

A shady seat at Lord's, an even score,
Nine wickets down, and only one ball more,
With Jessop crouching, and with Trumble on—
And what were all Golconda to a FOUR!

At that moment a mustard-gas shell hit the front of the dug-out. "There's your four," said my companion; "better get our respirators on."

Wilson introduced me to the literary coteries, the New Vagabonds, and the New Bohemians. They met in various inns in the Strand and Fleet-street district, and an architect was to them something of a curiosity. He for his part thought the Bohemianism a little cultivated, not to say forced, but the members as individuals taught him a lot.

Michael Pope, who, when bobbing of the hair was something new, came out with the revised version of an old line, "And beauty draws us with a shingled hair"; Arthur Machen, who afterwards invented the story of the angels at Mons, and made people believe it; Edgar Jepson, looking more cynical than any man could possibly be; gloomy Edwin Pugh; Summers, a real London cocksparrow and leading light of the Gallery First-nighters Club; all these and many others met, drank, and talked, particularly talked. It was good talk, though, salty and refreshing.

One of the best talkers I ever met was Lionel Johnson. He was one of a group that met at a public-house in Charing Cross-road, and afterwards moved to Hennekey's, in Holborn. That group had a strong artistic and architectural section; Mackmurdo, Selwyn Image and Herbert Horne were often there; Stewart Headlam and Father Hogg looked in occasionally. Graham Nicholas and I who lived in or near Gray's Inn were constant visitors, and Mrs. Image came along when the theatres shut. Twelve o'clock was the closing hour.

Lionel Johnson was a slight, frail creature with a clear, incisive brain, infinite scholarship, and all a poet's delight in fine imagery expressed in fine English. He was writing articles then on the classic writers for the *Daily Chronicle*, if you please, and his book, "The Art of Thomas Hardy," had just been published. Poor Lionel—he was a brilliant scholar who, when he came down from Balliol with honours thick upon him, seemed to have the literary world at his feet, but the fates determined otherwise. To apply to him his own words, "His soul was of the Saints," but his frail body could not stand up to the strain he imposed on it, and he died, tragically enough, in his early thirties.

The man who held this group together was Selwyn Image, a rare and notable spirit, of whom it is impossible to speak adequately in a brief article such as this.

On a day in 1930, H. M. Fletcher and I attended two funeral services, one, in St. Paul's Cathedral, of the President of the Royal Academy, the other at St. Anne's, Soho, of Selwyn Image. The first was full of ritual and circumstance, largely attended by the famous—Cabinet Ministers, ambassadors—impressive and dignified, but with the feeling of importance strongly emphasised. The second was a simple affair of a few architects, poets and artists, painters and sculptors and craftsmen, met to do honour to and mourn the loss of a friend. Yet I felt, and I think Fletcher did also, that in the essential things of real human greatness, Image in himself possessed the fuller measure and was the far truer artist.

The Actors' Memorial in Shoreditch Church.

It was in the early years of this century that I designed the memorial in Shoreditch Church to the Elizabethan actors, playwrights and men of the theatre who lived or worked at the Curtain Theatre near by. Headlam asked me to do this, and in due course it was unveiled by Sir George Alexander. After the ceremony we all went up to lunch at the Liverpool-street hotel.

Next to me sat a little old lady, a Mrs. Stopes, who had a detailed and comprehensive knowledge of Shakesperiana. Her daughter, the doctor, has, I believe, since become known to a wider public. After lunch, Sir George made a very good speech in which he told an interesting story of Shakespeare's life. During this, Mrs. Stopes became more and more agitated. Seizing her menu card she wrote, "The story you have just told is entirely untrue and has been discredited for fifty years." This was passed to Alexander just as he was finishing a well-rounded peroration. He read it and realised, knowing Mrs. Stopes, that he had made a first-class gaffe. With a true actor's assurance he turned towards the Press representatives and said, "I could wish that the story I have repeated were authentic, but, alas! it is entirely untrue, and" (this was said with great firmness) "has been discredited these fifty years." All was well, and after lunch Mrs. Stopes talked to him for his good, much to Lady Alexander's amusement.

After working in several London offices, my last job before starting my own practice was with Harold Cooper, in Bloomsbury-square. The main work there at that time was the building of No. 15, Stratton-street, a house of Portland stone, rather in the Ernest George manner, but with a different individual character.

The original intention was to produce a building incorporating the work of many artist craftsmen, mostly men of the Art Workers' Guild, selected for the sympathy of their aims and the high quality of their work. The result was a house in which every room was, in its own way, a piece of high interest, and yet a part of a unified conception.

The plan was simply that of a good London house. On the ground floor came the hall, dining-room and billiards-room. The great drawing-room filled most of the first floor, and above were the library and the bedrooms. The staircase was of English oak, with a balustrade of trees and little boys, carved by Stirling Lee and W. S. Frith; the windows were Image's. The billiards-room had low cupboards in unpolished mahogany, with a green morocco-lined wall above, and a beaten dull copper frieze by Nelson Dawson. The fireplace had a bronze panel of racehorses at the start of a race, modelled by Arthur Walker—something of a change from Florence Nightingale and the like. He went down to Newmarket, and lived for a time with trainers, jockeys and stable-lads, and, of course, horses. I believe he even ate horses. The stained glass in his room was by Christopher Whall and the door furniture Nelson Dawson's. The panelled satinwood drawing-room had marble fireplaces carved by Pomeroy, and really delightful silver finger-plates of Dawson's. All the furniture in the house was specially designed and made; even the library had its books bound in covers with decorations suitable to the contents. The poets were in vellum; the sporting writers (and they were many) in pigskin; and the novelists and essayists in red or green morocco. Cost, apparently, was not a matter of great importance, but when the whole was reckoned up it was quite certainly less than the great decorating firms would have charged for their "period" rooms, the baronial hall, the Adam parlour, the Louis Quinze drawing-room, and so on! Why it was dismantled I do not know, but I hope the bronze racehorses and the silver finger-plates found owners who realised what they were getting.

I find that the writer of reminiscences has but little choice in what he shall say; memory brings the light of other days to him, and he must needs follow that light wherever it may lead. I have not yet reached, in the writing, some of the most interesting periods of my life, and the light is still burning. If, therefore, at some future time a volume shall appear, the editor of *The Builder* will not entirely be acquitted of responsibility.

ARCHITECTURE ON STAGE AND SCREEN

BY H. V. LANCHESTER.

REALISTIC settings for stage plays developed mainly during the eighteenth century, though there were examples of it before this, such as the well-known one by Palladio, but such settings were often varied by fanciful ones, and in general no serious attempt was made to accurate presentation so long as the general impression was in accordance with the character of the play. Gradually there developed the feeling for correctitude, to a definite period in costume and setting in plays, and this brought in the demand for the recognition of architectural styles, though these have seldom been handled with the degree of accuracy that would satisfy the trained archæologist.

There are several reasons for this—probably the principal one being that it takes a very minor place in the minds of the theatre-going public, and, consequently, in that of the producer; then again, the scene-painter's qualifications on this point may be somewhat sketchy. In one such case, a carefully drawn study of a building in Rome, the Doric columns were transmuted into Corinthian ones on the ground that these "were the Roman style"; in another, at a Covent Garden performance of "Aida," the Egyptian columns of the temple were depicted ranged outside according to the Greek plan, and numerous other instances of such errors might be quoted.

Some actor-managers and others responsible for the production of plays, both here and abroad, have given very close attention to the scenic settings in order to ensure harmony between these and the character of the play, but such correctitude has been the exception rather than the rule, particularly in the case of important operatic efforts; it may often be assumed that the strain of co-ordinating the primary demands of the drama and musical efficiency has left that of the visual presentation rather in the background. Another alternative has been advocated by a school of thought, of which Mr. Gordon Craig was a prominent exponent, namely, to evade the difficulties by excluding the presentation of any stylistic features and regarding the scene as merely a suggestive background simplified to the maximum possible extent; this solution is undoubtedly less irritating to the trained eye than any more elaborate treatment not accurately achieved.

A scene from "Caesar and Cleopatra." The settings of this Gabriel Pascal film (another is shown below) are by Oliver Messel.

There is yet another alternative, examples of which have been seen in some of the best productions of opera and ballet from eastern Europe. This, only available to those of exceptional capacity, is the complete removal of all effects in scene and costume from the realm of realism to that of fantasy, so as to carry us into another world where the normal traditions cease to be valid and cannot enter the mind of the critic by evoking comparisons with them. The architecture and personalities became those of dreams unrelated to any recognition of historic or familiar facts.

Passing from the stage to the film, the problem of architectural presentation takes a different aspect. The organisation of the film industry is one that admits of expenditure on a scale out of all proportion to that admissible for stage productions, and while the errors in the latter case may be due to practical or economic demands, those of the film are mainly due to excessive facilities, affording an easy road towards over-dramatisation. This often takes the form of a failure to appreciate scale; impossible spaces and gigantic stairways are exhibited in cases where these do not conform to the conditions of the plot, apart from minor discrepancies from possible facts. In one case the interior of a fourteenth-century castle would have practically filled the Albert

On this page are two settings from Laurence Olivier's production of "King Henry V." The scene above represents the French Court, and that below is a representation of the old Globe Theatre, Bankside.

Hall, and in another scene the hero scaled the walls by the aid of a thick covering of ivy. What mediæval baron could have been so imprudent as to have permitted such an adjunct to his fortress?

The illustrations given from "Henry V" and "Cæsar and Cleopatra" show very clearly the points made in this article. The first two examples can safely be left to critcism by our architect readers, though the hint might be given that a little study of the Quennell book on "Everyday Things" would have been helpful to the producer. In the second case, these and other scenes skilfully display the rather mixed ideals based on the Ptolemaic and European influences probable in the Alexandria of that day.

The matter of the appropriate scale is one in which both stage and screen frequently come to grief. Not to speak of the drawing-room where the actors often look like puppets and the furniture that from a doll's house, there is the standard interior of a cottage home where the room is some four times the size of anything likely. The stage has some excuse for this, as its reduction, though possible, involves some visual and acoustic difficulties, but in the case of a film this matter of the appropriate space to be indicated can easily be dealt with.

At the present stage of popular education in architecture and the allied arts it can hardly be expected that these considerations will take a foremost place in the appreciation of stage and film productions, but surely the cultivated critic should expand his review to include them, though at present this rarely occurs. It would, perhaps, be unfair to deal in this way with presentations where the resources are limited, though these may be urged not to attempt a type of production beyond their means, but the more important efforts, especially in the case of films, should receive very definite criticism in order to secure, in the first case, accuracy, where realistic effects are the objective, and a harmony between the performance and its setting where the ensemble depends on this. With every prospect that the British film industry will be restarting its major activities it is important that it should take advantage of well-equipped advisers on the various aspects of production outlined in these brief notes; there are many such advisers available possessing the necessary artistic and archæological knowledge.

STUDIES IN POLISH ARCHITECTURE

WHAT is in several respects a remarkable book* was published a few months ago. Its production under present conditions is in itself something of an achievement; but the striking feature of the volume lies in the fact that all the 120 bold drawings which it contains are the work of a man who was born so recently as 1917 and served for three years as a flight-sergeant in the Polish Air Force from 1939 till 1942, when he resumed his architectural studies. He had spent only two years in the Warsaw School of Architecture before he became an airman, but his talents were already so manifest that he was released from military service in 1942 in order to prepare himself to take a share in the vast programme of reconstructing the devastated towns of Poland, and then joined the Polish School of Architecture which had become affiliated to the Liverpool University School.

Glancing through the illustrations, one's first impression is that they form a series of sketches of famous Polish buildings arranged in historical sequence, from a primitive stockaded fortress of pre-Christian days, through the Romanesque, Gothic, Early Renaissance, Baroque and Rococo periods up to the very latest thing in modernism. Even if that impression were true, they would be remarkable enough; but the amazing statement is made that they are entirely fanciful drawings, done for the most part in England, and do not represent any particular buildings. Thus they may be regarded as "memory drawings," but the way in which the artist has caught with wonderful skill the spirit of each successive phase of his native architecture, interiors as well as exteriors, shows how completely he has absorbed the character of every historical period. His delineation of figures, costume, furniture and landscape is as happy as his treatment of the buildings, and the draughtsmanship is both imaginative and confident.

The introduction tells us of an unusual practice by which Polish architectural students spend their vacations in intensive study of the traditional building methods and social conditions of some selected region. It also informs us that a complete fortified town on the banks of Lake Biskupin, built entirely of wood, between 700-500 B.C., has recently been excavated from the muddy slime which has preserved it intact. It consisted of one-family houses arranged in parallel streets and displays sound craftsmanship. Lastly, the editor quotes a definition of architecture as "a technical function carried out by a poet."

M. S. B.

* STUDIES IN POLISH ARCHITECTURE. By Jerzy Faczynski. University of Liverpool Press. 21s. net.

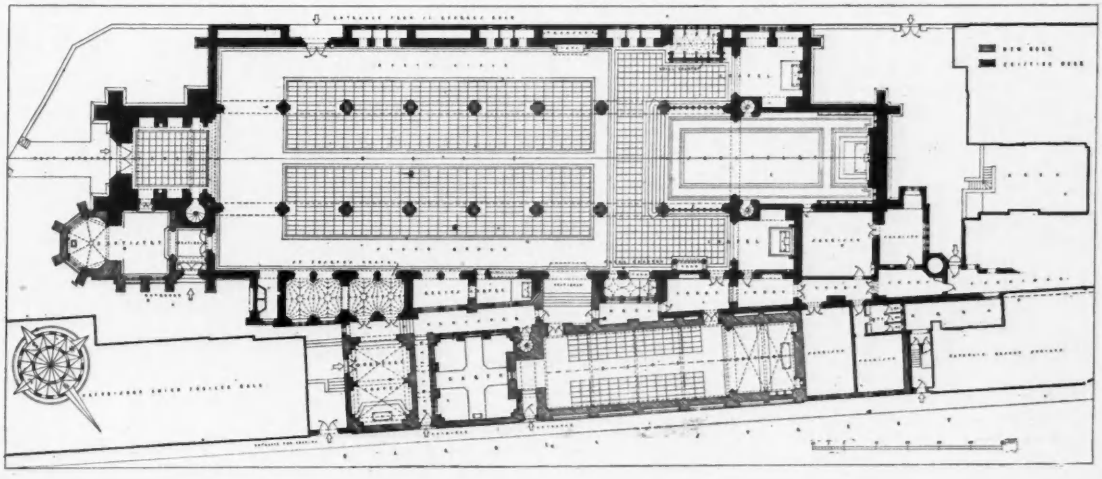
Drawn by J. D. M. Harvey

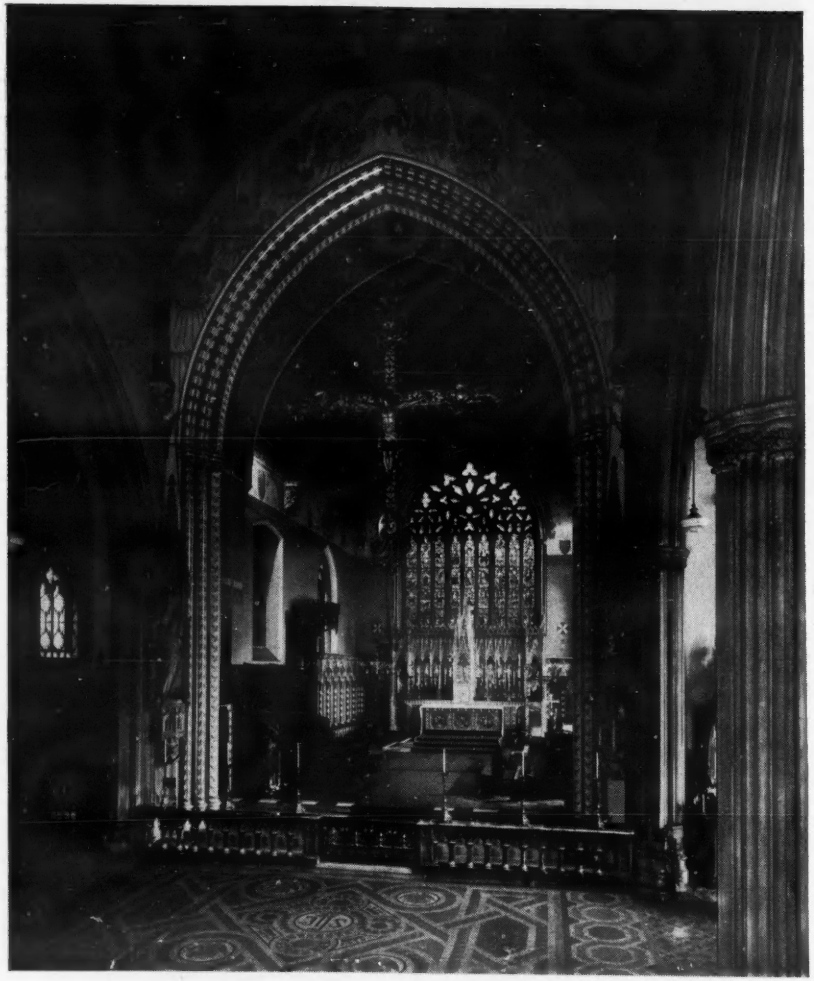
THE CATHEDRAL AS IT WILL BE COMPLETED.

ST. GEORGE'S CATHEDRAL, SOUTHWARK

ROMILLY B. CRAZE, F.R.I.B.A., ARCHITECT FOR REBUILDING

THE BUILDING OF THIS ROMAN CATHOLIC CATHEDRAL WAS commenced in September, 1840, and dedicated on July 4, 1848, being erected to the design of Augustus Welby Pugin. The plan, as at present existing, consists of a nave divided into eight bays, terminated at the liturgical east end by the chancel and at the west end by a tower. The aisles, which are almost the same height as the nave, are each terminated at their eastern





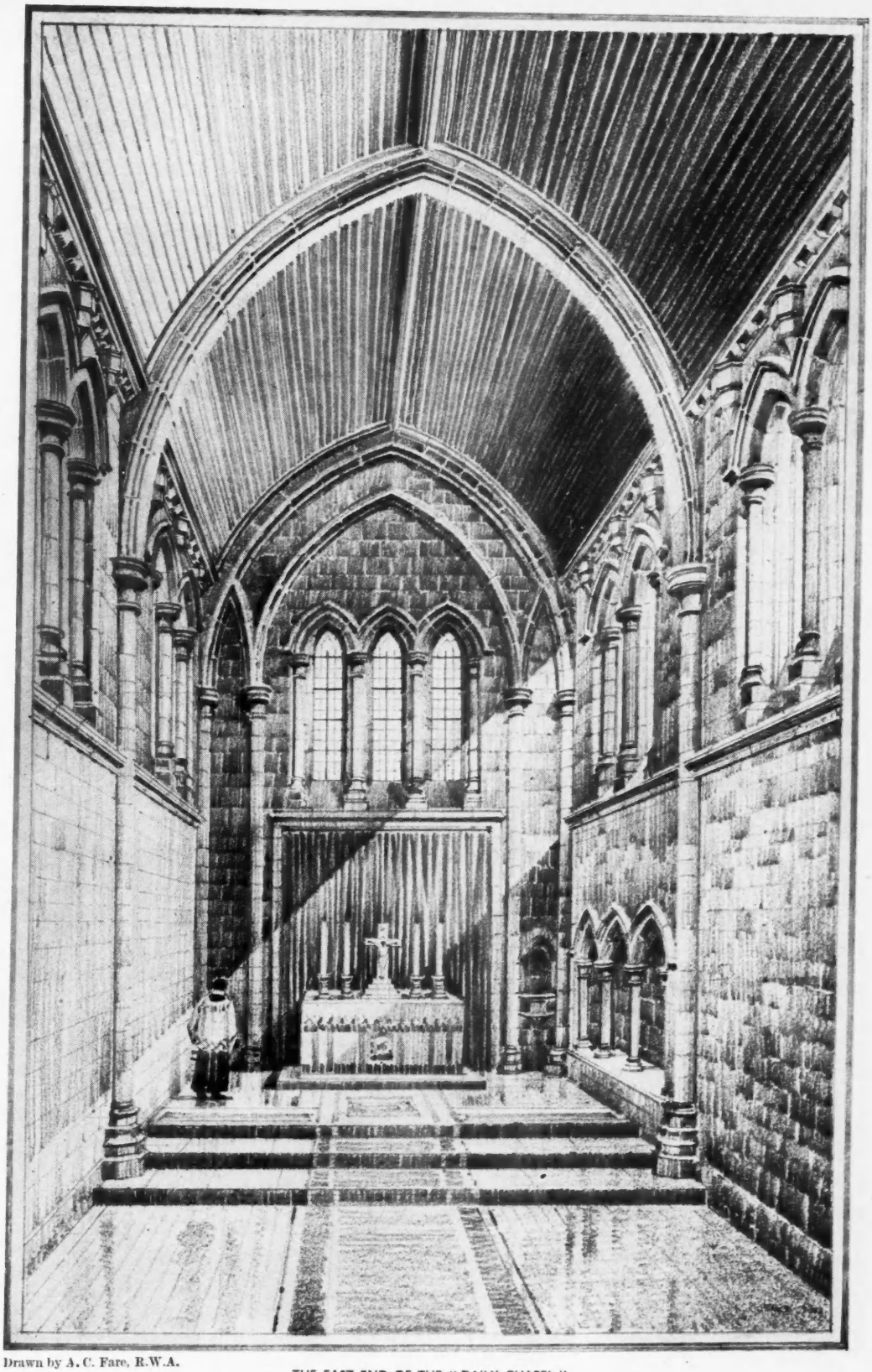
PUGIN'S EAST END.

THE CHURCH AFTER THE INCENDIARY RAID OF APRIL 17, 1941.

ST. GEORGE'S CATHEDRAL, SOUTHWARK. ROMILLY B. CRAZE, F.R.I.B.A., ARCHITECT FOR REBUILDING

extremities by a chapel. There is no clerestory. Pugin's original design included a tower and spire rising to a height of 320 ft., but the substructure only of the tower was erected. The design of the church is in the manner of the Decorated Period, with geometric tracery in the windows. The internal dimensions are 240 ft. long by 70 ft. wide.

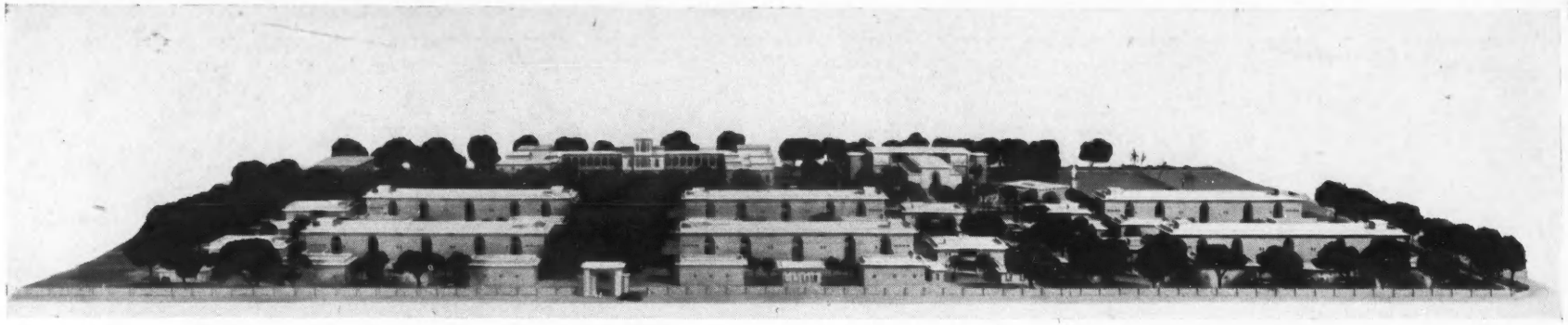
On the night of April 16-17, 1941, the Cathedral was almost entirely destroyed by fire during an attack by enemy aircraft, but the whole of the external walling can be retained and reused. His Grace the Archbishop of Southwark has appointed Mr. Romilly B. Craze, of Messrs. Milner and Craze, FF.R.I.B.A., as the architect for the proposed reconstruction, in association with Mr. E. J. Walters, F.R.I.B.A., and plans have been prepared which embody, in the reconstruction of the existing church, the entire rebuilding of the nave, with the addition of clerestories and with vaulted aisles and nave; the lengthening of the existing sanctuary westwards into and incorporated with the first bay of the nave; the insertion of transepts; the completion of the tower; and, as additional buildings attached to the church, a new baptistry at the western end of the north aisle and a large "daily" chapel connected by a small cloister to a mortuary chapel, which latter chapel is planned as an extension to an existing chapel. Provision is also made for additional sacristies. The completed tower will be the same height as Pugin's intended tower minus the spire—namely, 180 ft.



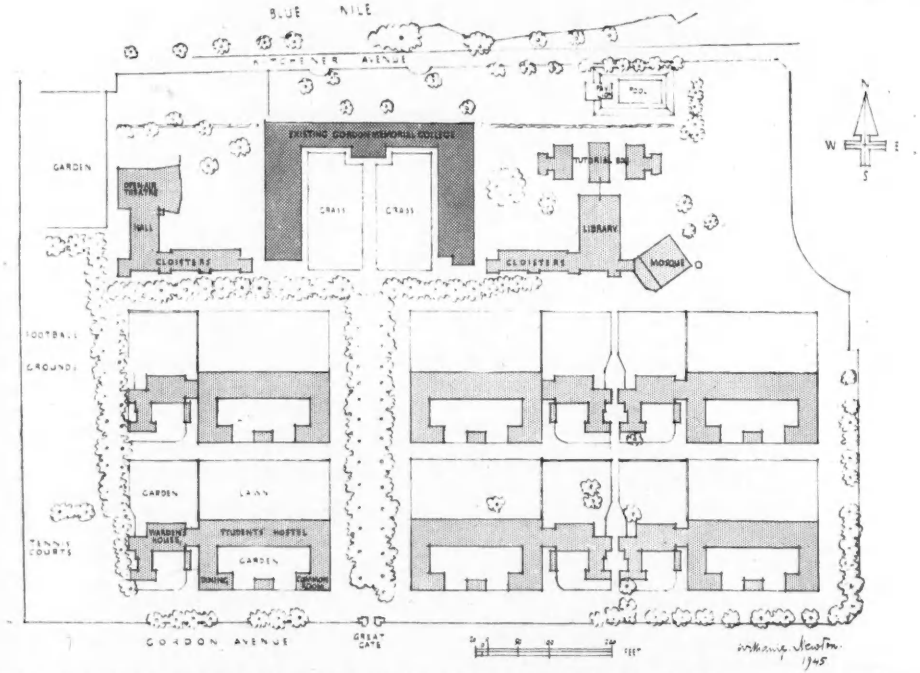
Drawn by A. C. Fare, R.W.A.

THE EAST END OF THE "DAILY CHAPEL."

ST. GEORGE'S CATHEDRAL, SOUTHWARK



GENERAL VIEW OF DEVELOPMENT, FROM THE SOUTH.



THE LAYOUT. THE CROSS-HATCHED PORTION (GORDON MEMORIAL COLLEGE) IS THE ONLY PART EXISTING.

GORDON MEMORIAL COLLEGE, KHARTOUM

SCHEME FOR REDEVELOPMENT

WILLIAM G. NEWTON, M.A., F.R.I.B.A., ARCHITECT

THE ORIGINAL COLLEGE BUILDING, forming three sides of a square open to the south, was built about 1900 after the battle of Omdurman and the liberation of the Sudan from the Mahdi. It was the design of the Khedive's architect, of the name of Fabricius. It is a somewhat heavy but impressive building of brick, with a flat roof and a strongly moulded arcade on both floors, deeply shadowed in daytime. The rest of the site, which is some 1,500 ft. by 900 ft., is—except for a few buildings round the edge here and there—trees and sand and playing fields (which must be flooded weekly to keep grass on them in that dry climate and fierce heat).

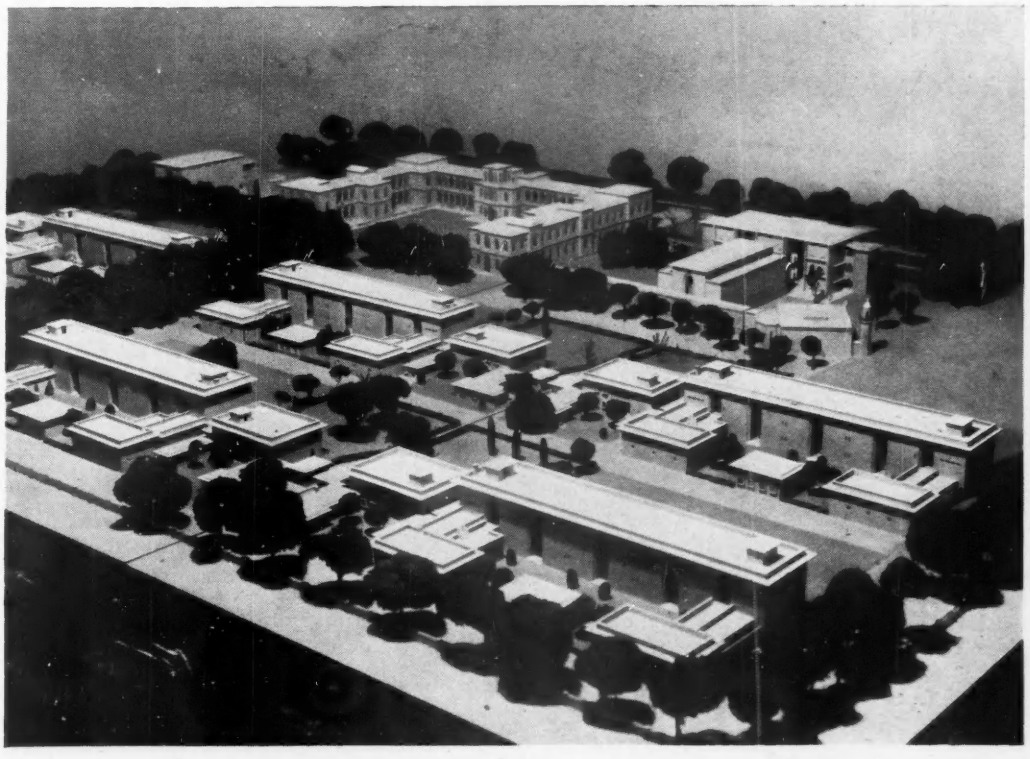
It is now proposed to expand the College into a University for the Sudanese. The development shown in the model comprises the following: Cloisters on either hand of the original College building, with fountains and running water channels leading to (on the west) a Degree Hall and open air theatre and (on the east) a library (to house a quarter of a million books) and a Mosque. Behind the library is a block of teaching rooms.

In front (*i.e.*, to the south) of these groups are six hostels for students (about sixty in each) and six houses for married Wardens, in connection with the hostels. Two more hostels will eventually be built south of Gordon-avenue (the road south of the site) and one hostel for women students, to the north-west of the site.

The two conditioning factors of most importance are: (a) the heat and glare from sunshine, and (b) the north-to-south and south-to-north currents of air. The rooms in the hostels have windows which open into high porches in such a way that much of the glare is kept out of the rooms. Also these porches canalise the two prevailing air-currents. The windows, further, have an arrangement of shutter-scoops, to catch these air currents as they pass. The west and east ends have no win-

Model by E. J. Thring, A.R.C.A.

VIEW OF MODEL FROM NORTH-EAST.



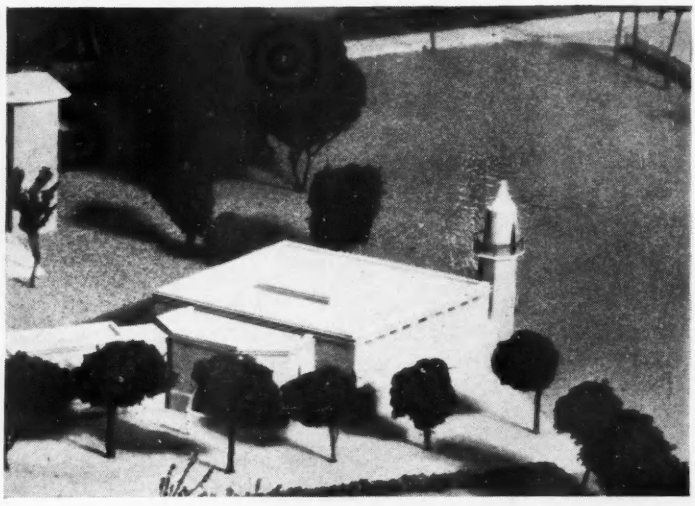
VIEW OF MODEL FROM SOUTH-EAST.

GORDON MEMORIAL COLLEGE, KHARTOUM: SCHEME OF DEVELOPMENT

dows. All have flat roofs, as these are used for sleeping for most of the year. In front of the main hostel-block are one-storey buildings containing dining-halls and common-rooms. The Wardens' houses have open loggias through the middle, and many rooms open on to these.

The two cloisters, which are to run on either side of the existing building, are to give covered approach to the hall on the one side, and the library and Mosque on the other. They also screen the long lines of latrines, which have to be accessible to the camel-carts, which collect the soil at night. In the end bays of each is a fountain, and a water-stair runs down the front of the cloister to give a cooling sound.

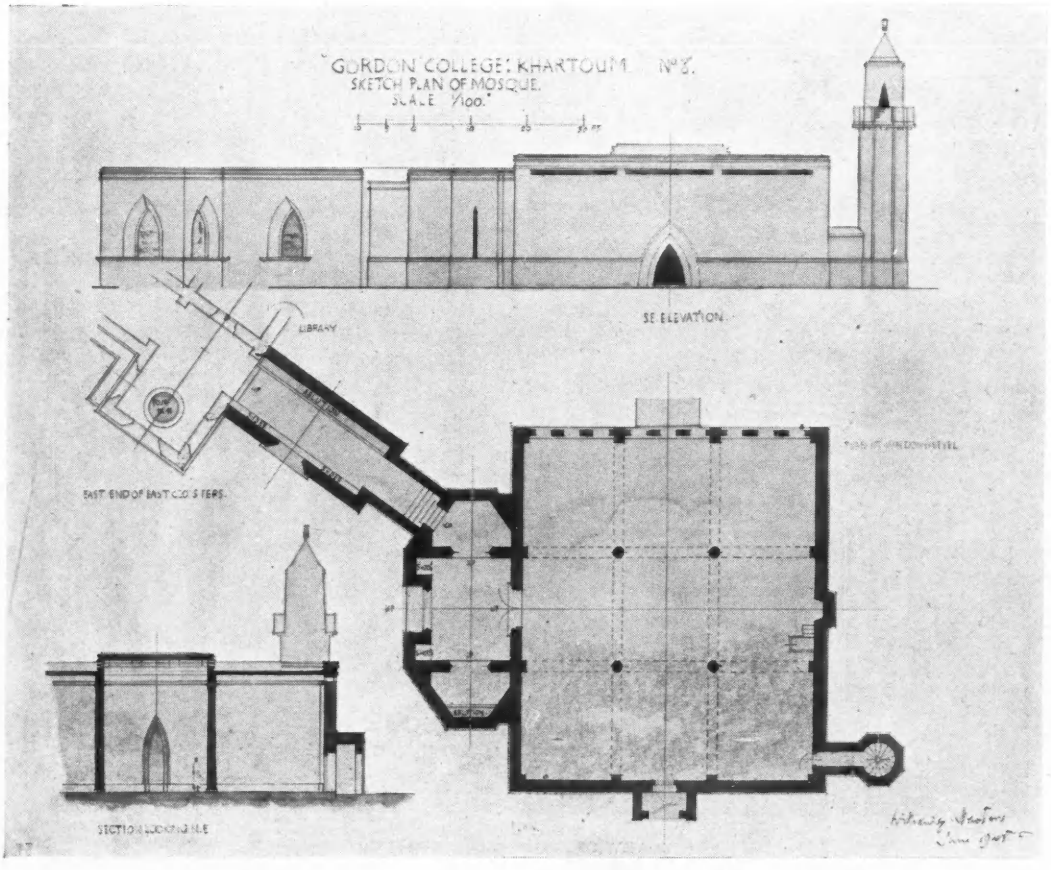
The degree hall is lit by clerestory windows, and also has slit windows at head height. At the north and south ends are large openings to allow the air-current to pass through freely. It can be used in conjunction with the open-air theatre behind. The library consists of a reading-room with book-stacks all round, the latter without windows except small ones north and south. The reading-room has north and south openings, like the hall. The Mosque is flat-roofed in nine compartments; the central compartment is raised to let in light. There are also small clerestory windows in the north and south walls. It would be white-washed inside, with granite columns raising the central compartment.



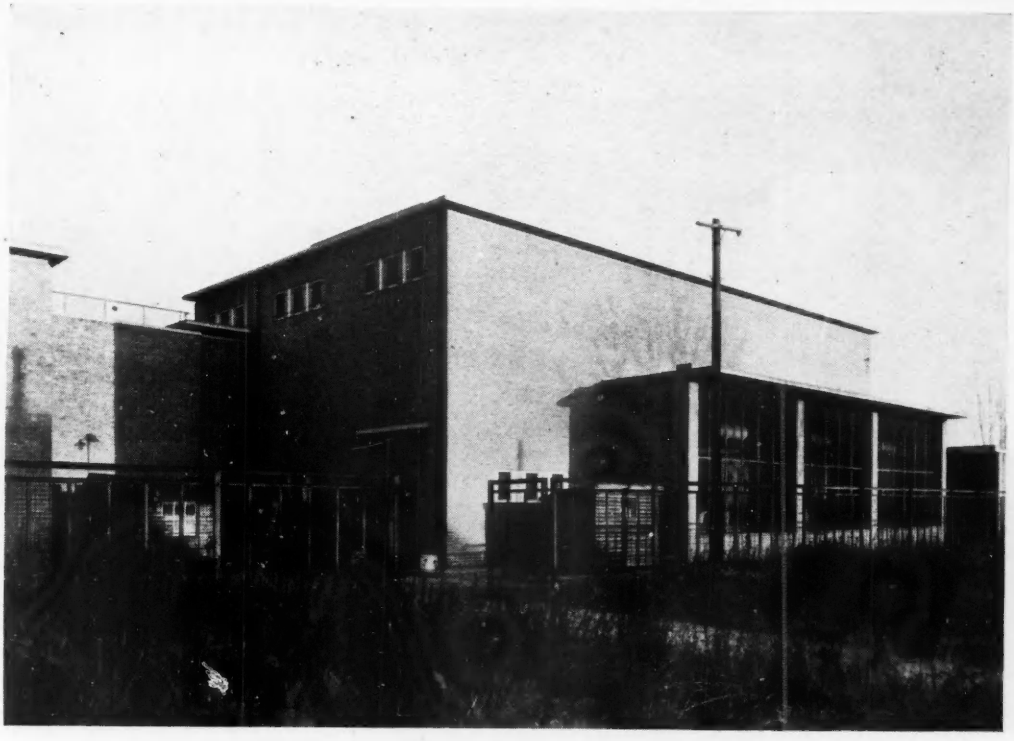
VIEW SHOWING THE PROPOSED MOSQUE.

The teaching-rooms are arranged with an opening (about the width of the rooms) running through from south to north. This will be under the common roof, so that the room windows which open on it will be mainly in shadow. The corridor on the upper two floors will be bridged across the opening.

On the north of the site, where the Blue Nile runs, it has not been possible to have a private terrace, as Kitchener-avenue is needed for traffic. But only certain traffic will be allowed, and the river-front will be made, as far as possible, a feature of the University estate.



GORDON MEMORIAL COLLEGE, KHARTOUM. PLAN, ELEVATION AND SECTION OF PROPOSED MOSQUE.



EAST FINCHLEY SUB-STATION : VIEW FROM NORTH-WEST.

ARCHITECTURE FOR LONDON TRANSPORT

ADAMS, HOLDEN & PEARSON, FF.R.I.B.A., ARCHITECTS

WE ILLUSTRATE SOME OF THE MORE RECENT WORK designed for the London Passenger Transport Board by Messrs. Adams Holden and Pearson, FF.R.I.B.A. The station at East Finchley—jointly operated by London Transport and the L.N.E.R.—is on the High Barnet extension of the Northern Line, and like several others was under construction when the war broke out.

New tracks were laid down at the sides of the L.N.E.R. lines for the tube trains coming out from the tunnels nearer London and the out-of-date station buildings required entirely remodelling.

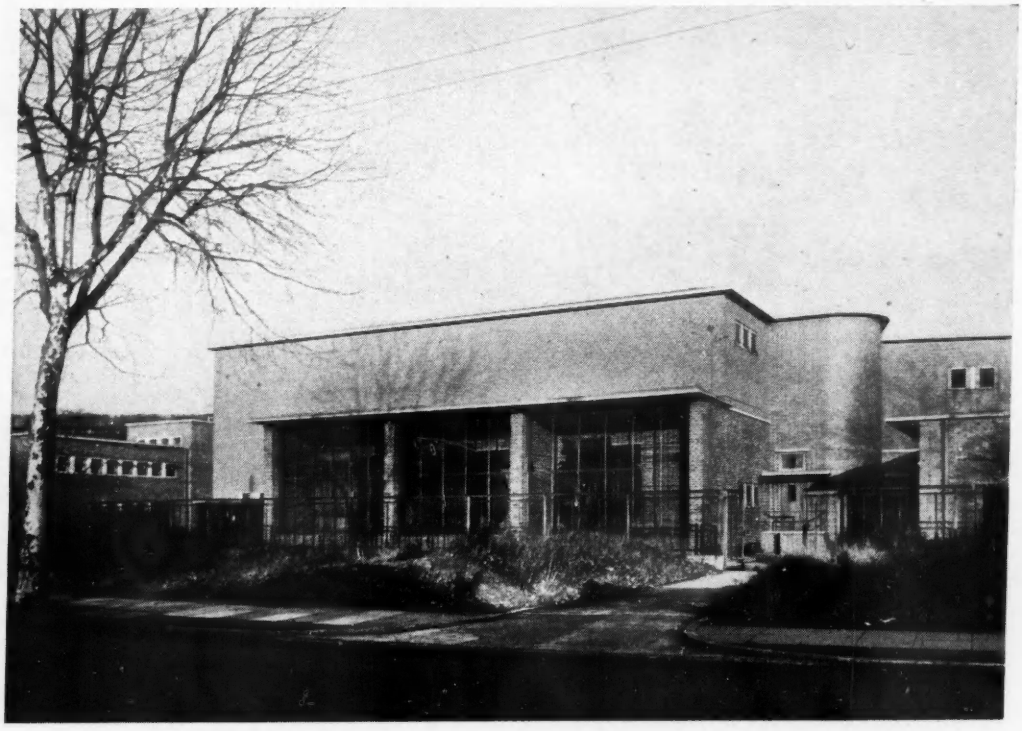
The line here runs on an embankment with a four-track bridge over the High-road. The platforms are therefore protected from the wind and weather by reinforced concrete canopies over part of their length and by brick walls; from each platform are semi-circular staircases to the Yard-master's offices and trainmen's messroom, etc., the passengers having access by means of a subway connecting the main ticket hall on the High-road (north-east) side with the smaller entrance on the Hampstead Garden Suburb side. The lead-encased figure of an Archer (by Eric Aumonier) has reference to the ancient hunting grounds of the district, and is one of a series of symbolic figures projected for the various stations of the new line.

Just the other side of the bridge is an important sub-station, also designed by Messrs. Adams, Holden and Pearson, with a considerable structure in the shape of a reinforced concrete retaining wall supporting the railways tracks, designed by Messrs. Travers Morgan and Partner.

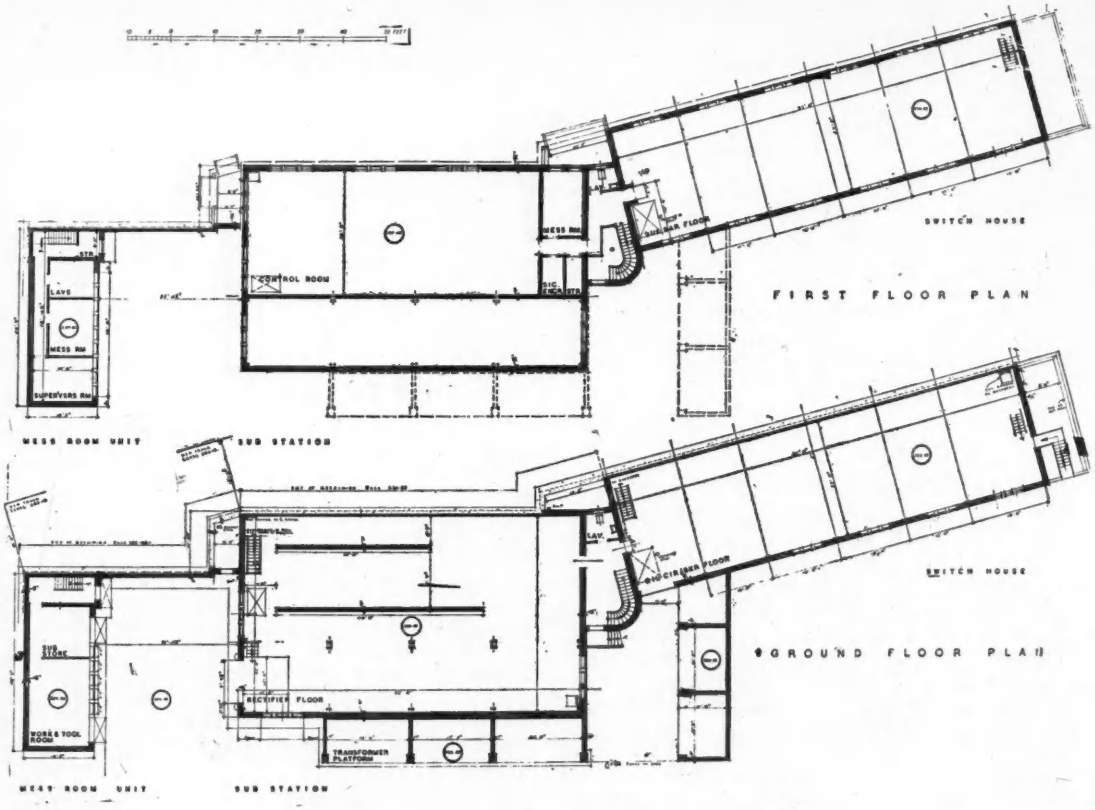
Nearer London, on Archway-road, is a smaller sub-station, also illustrated, the sculptured panel of an electrical transformer on the side of the ventilation shaft tower being by Joseph Armitage.

The materials used on all these buildings are reinforced concrete on a steel frame construction with wire-brushed finish in Portland stone aggregate and sand-faced Buckinghamshire brickwork. The bond used in the facing brickwork is a staggered English bond giving a slight diaper pattern. In the case of the large box-like structures of the sub-stations, it was felt advisable to introduce a further motif in the pattern of the brick-bonding by means of larger diaper, using the reddest headers picked out from the bulk supply. The effect of this is quiet and not always immediately to be observed, but adds greatly to the interest of the walling.

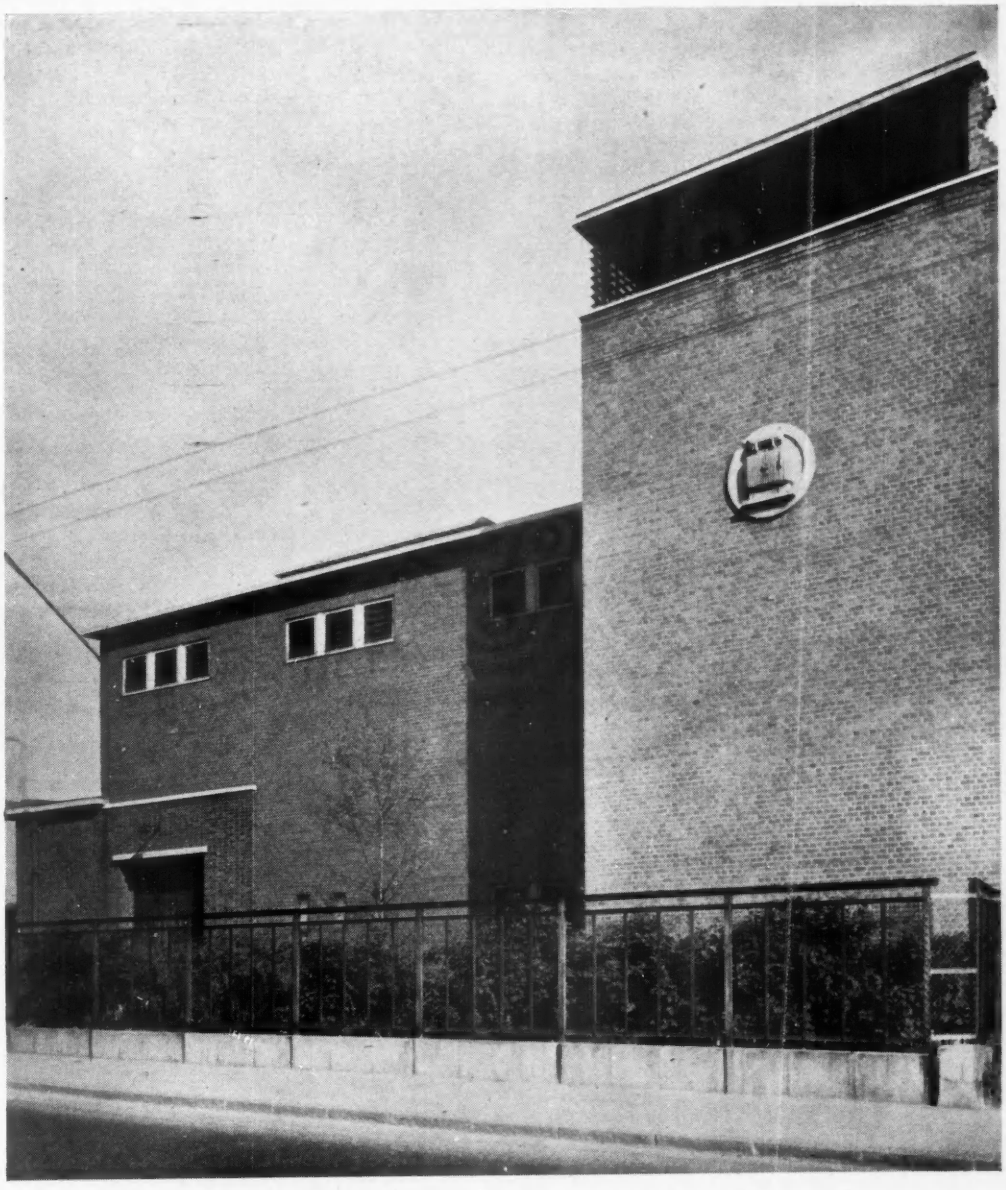
The main contractors for the station were Messrs. Prestige and Company, and for the sub-stations, Messrs. J. Jarvis and Son.



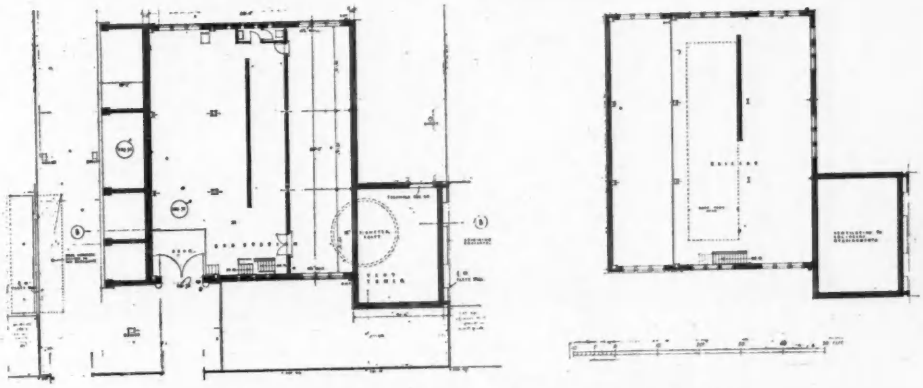
EAST FINCHLEY SUB-STATION : VIEW FROM SOUTH-WEST.



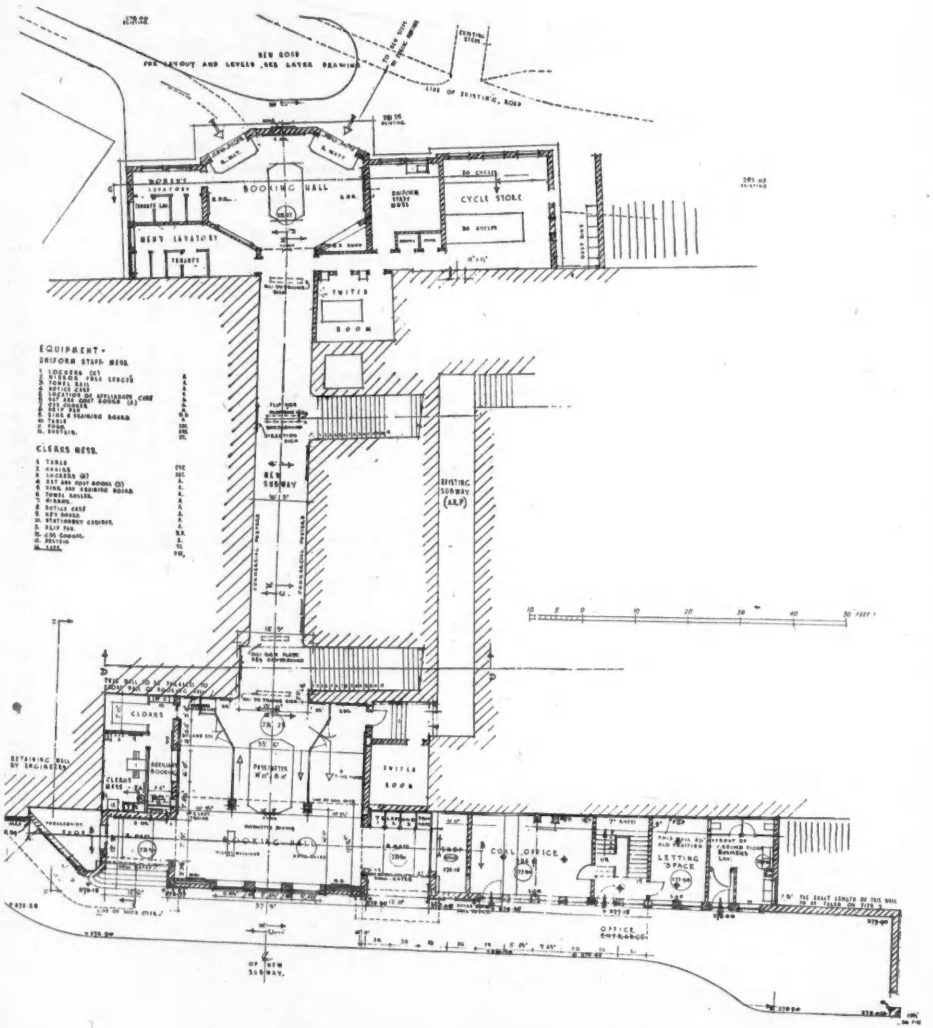
ARCHITECTURE FOR LONDON TRANSPORT



ARCHWAY ROAD SUB-STATION. THE SCULPTURED PANEL IS BY JOSEPH ARMITAGE.



ARCHITECTURE FOR LONDON TRANSPORT



LEAD-ENCASED FIGURE OF AN ARCHER, BY ERIC AUMONIER.

ARCHITECTURE FOR LONDON TRANSPORT: L.P.T.B. & L.N.E.R. STATION AT EAST FINCHLEY.

L.P.T.B. & L.N.E.R. STATION, EAST FINCHLEY. THE NORTH-EAST ENTRANCE.

L.P.T.B. & L.N.E.R. STATION, EAST FINCHLEY. THE SOUTH-WEST ENTRANCE.

ARCHITECTURE FOR LONDON TRANSPORT. ADAMS, HOLDEN & PEARSON, ARCHITECTS.

NURSES' HOME

QUEEN CHARLOTTE'S MATERNITY HOSPITAL

STANLEY HALL & EASTON AND ROBERTSON, FF.R.I.B.A., ARCHITECTS

THE NURSES' HOME FOR THE NEW Queen Charlotte's Maternity Hospital, in Goldhawk-road, W.6—completed as far as war-time conditions would permit—was opened in May, 1945. The main carcass of the building was finished in 1940, after which further work was suspended until February, 1944, when it became imperative to release the accommodation temporarily occupied by the nurses in the Hospital building for extra beds badly needed for maternity cases.

During the intervening years the greater part of the building was used as a Government store by the Hammersmith Borough Council and one of the main difficulties which had to be overcome before the building operations could be resumed was the re-arrangement of this store, with the Council's consent, so as to enable more than half the building to be completed for its original purpose.

The work was carried out during a very difficult period of the war, when both labour and materials were not easy to get. Nevertheless, the finishes to the building are of a standard which compares very favourably with what would have been done had not the war intervened.

The building is a steel-framed structure finished with sand-faced, multi-coloured facing bricks and reconstructed stone dressings, with fire-resisting floors and staircases throughout. The windows are purpose-made metal windows obtained before the outbreak of hostilities.

SOUTH ELEVATION, SHOWING LINK TO HOSPITAL BUILDING.

On the first, second and third floors, under the present scheme, accommodation is provided for 60 Sisters and nurses. Each nurse has a room approximately 9 ft. by 11 ft. 3 in., and in the case of the Sisters a small dressing-room is additional thereto. Accommodation on these floors is also provided for common rooms, a five-bed sick-ward and a personal laundry and shampoo room, in addition to the bathrooms and lavatory accommodation to each floor.

On the ground floor a large kitchen (which serves the main Hospital as well as the nurses' home) has been installed, the old kitchen in the basement of the Administration Building which previously supplied the needs of the hospital and staff having now been closed down. Adjoining the kitchen is the staff dining room with cafeteria service. A recreation room and a rest room complete the centre part of the ground floor.

The west wing of this floor accommodates a training school for student nurses, with a large class room, model ward, steriliser, sluice, milk and cookery rooms. In addition there are private study rooms for the students and rooms for the Sister Tutor and Home Sister. The Staff Home is linked up to the main hospital by means of a one-storey building with rooms on either side of a central corridor, temporarily used as store rooms.

The building is heated throughout by hot water "Hospital" pattern radiators which derive their heat from the central steam boiler plant through the calorifiers in the usual way, the circulation being forced by means of steam turbine-driven accelerators. Domestic hot water supplies are similarly derived and circulated from the central plant. In certain sections of the buildings heating services are connected to the domestic hot water circulation for use in colder weather during the summer when the main heating plant is not at work.

The kitchen apparatus comprises steam-heated boiling pans and steam ovens which take their steam from the boiler plant mentioned above. The remainder of the cooking apparatus is gas operated, comprising roasting ovens, griller and the like. Auxiliary equipment includes electrically-operated refrigerator, food mixing machine and similar useful apparatus. The kitchen is ventilated by means of an extract fan situated in an appropriate housing on the roof of the building, and glass canopies or hoods are fixed over all pieces of cooking apparatus so as to ensure a ready means of removal of fumes, which are conducted through metal trunking to the extract fan and discharged to atmosphere at high level. The gas-operated fish-fryer is provided with a separate extract fan independent of all other ventilation.

It is noteworthy that no service pipes can be seen in the main

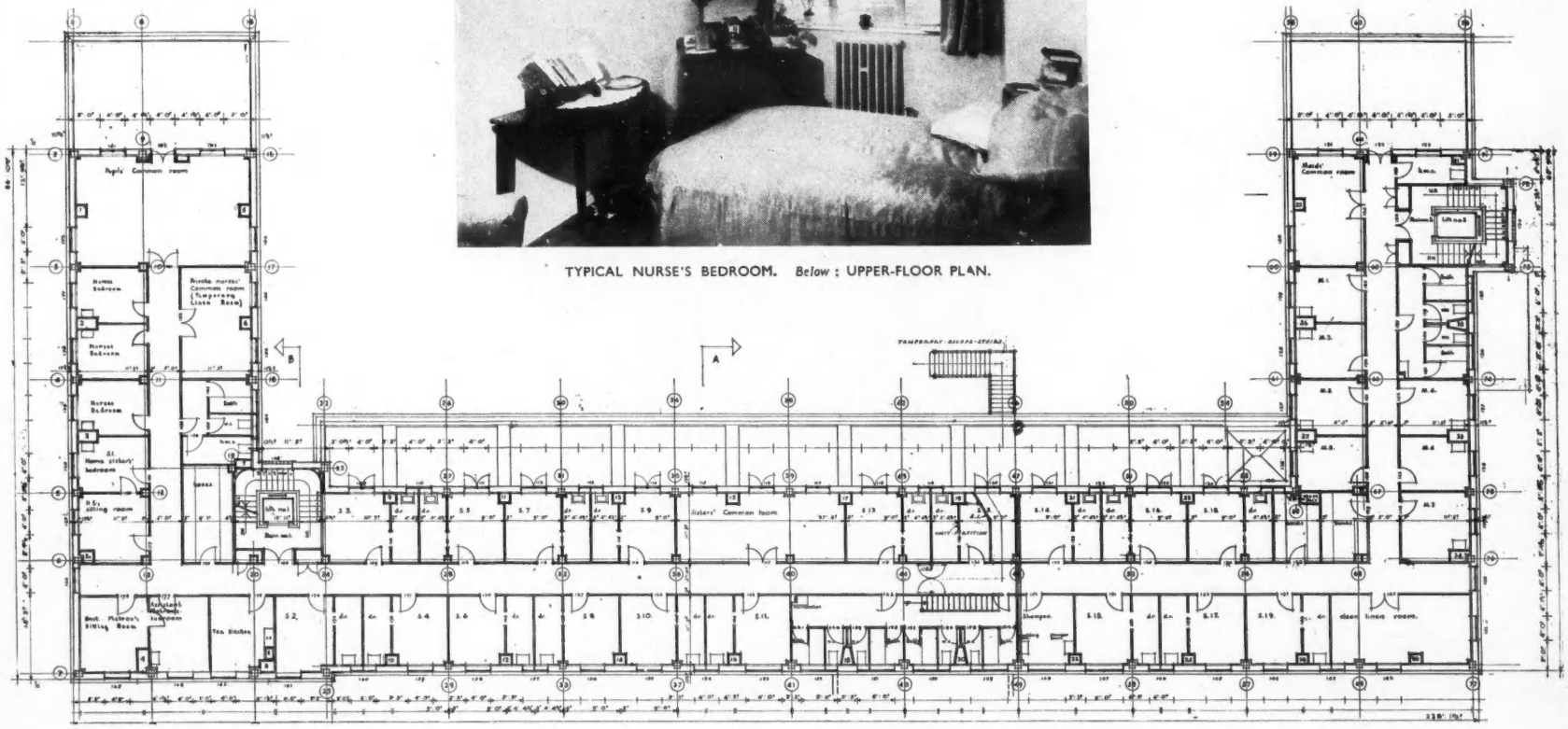
THE WEST ELEVATION.

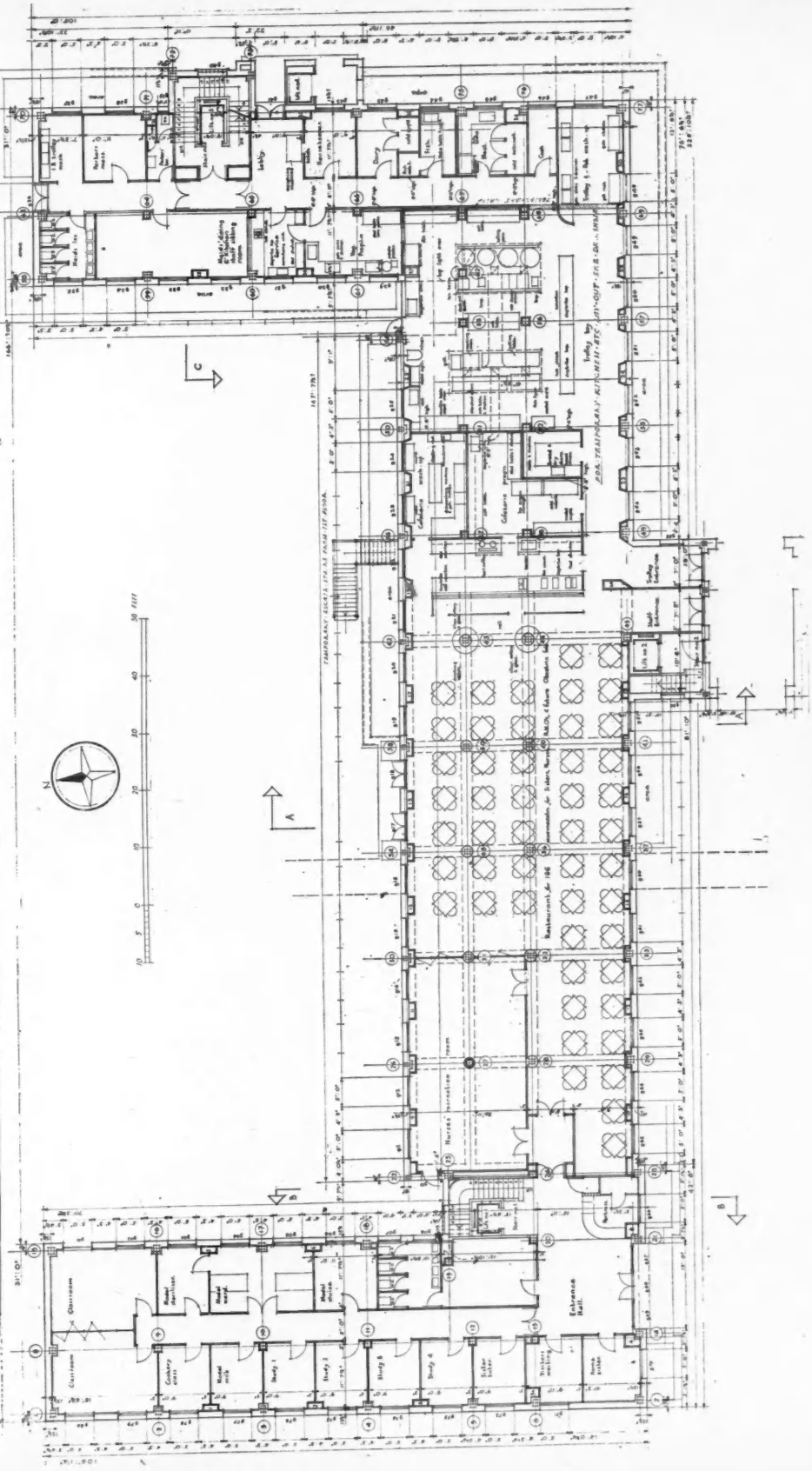
kitchen except very short vertical connecting pieces supplying the different apparatus, all main service pipes being carried below at ceiling level in the basement. A special calorifier, operated by steam, is installed to provide water for washing up at a somewhat higher temperature than that of the ordinary domestic circulation. The heating and ventilation work were carried out under the direction and supervision of the Consulting Engineer, Mr. H. A. Sandford.

When the remainder of the floor area of the Home as at present designed becomes available from the Hammersmith Borough Council, accommodation will be provided for about 125 nurses. The ultimate intention, however, is to add another two floors to the building, which will bring the total staff accommodation up to approximately 250.

The general contractors were Messrs. Prestige and Co., Ltd., and sub-contractors included:—Dawnays, Ltd., steelwork; Kleine Co., Ltd., fire-resisting floors; The Crittall Manufacturing Co., Ltd., metal windows and doors; Diespeker and Co., Ltd., terrazzo work; Bryon and Co., Ltd., wall and floor tiling; Hollis Bros. and Co., Ltd., wood block flooring; N. F. Ramsay and Co., Ltd., ironmongery; E. J. and A. T. Bradford, lettering; British Challenge Glazing Co., roof light; The Val de Travers Asphalte Co., Ltd., flats, etc.; Arthur Scull and Son, Ltd., sanitary engineering; Dent and Hellyer, Ltd., sanitary fittings; H. A. Neale and Co., electrical engineering; and Benham and Sons, heating and ventilating and kitchen equipment.

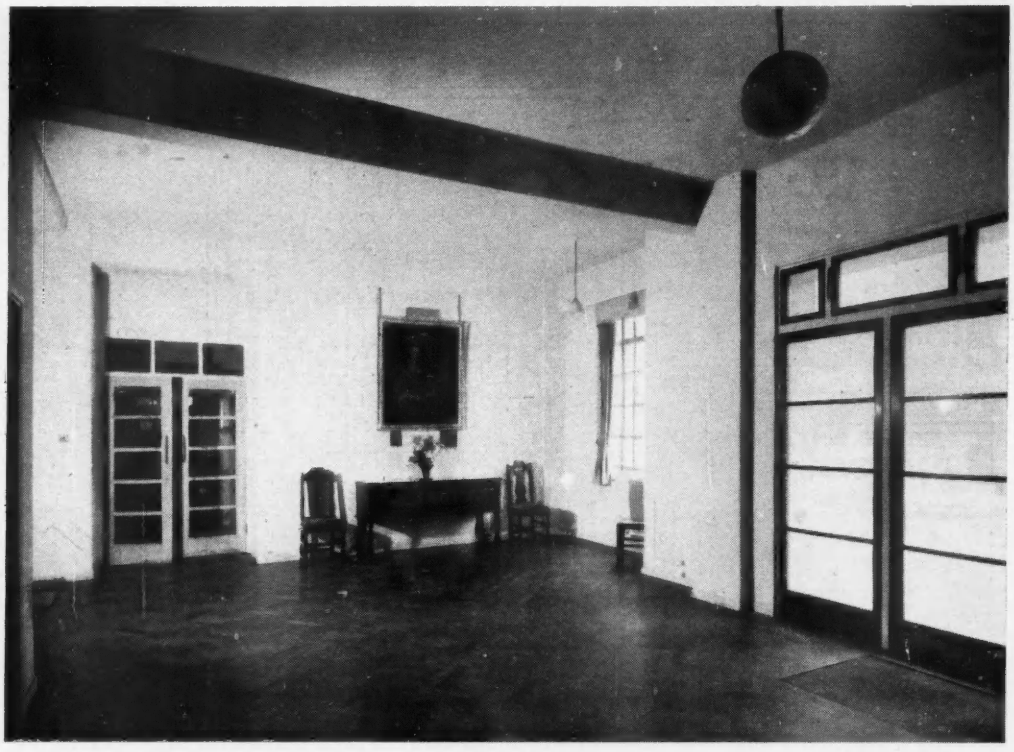
TYPICAL NURSE'S BEDROOM. *Below*: UPPER-FLOOR PLAN.





GROUND-FLOOR PLAN.

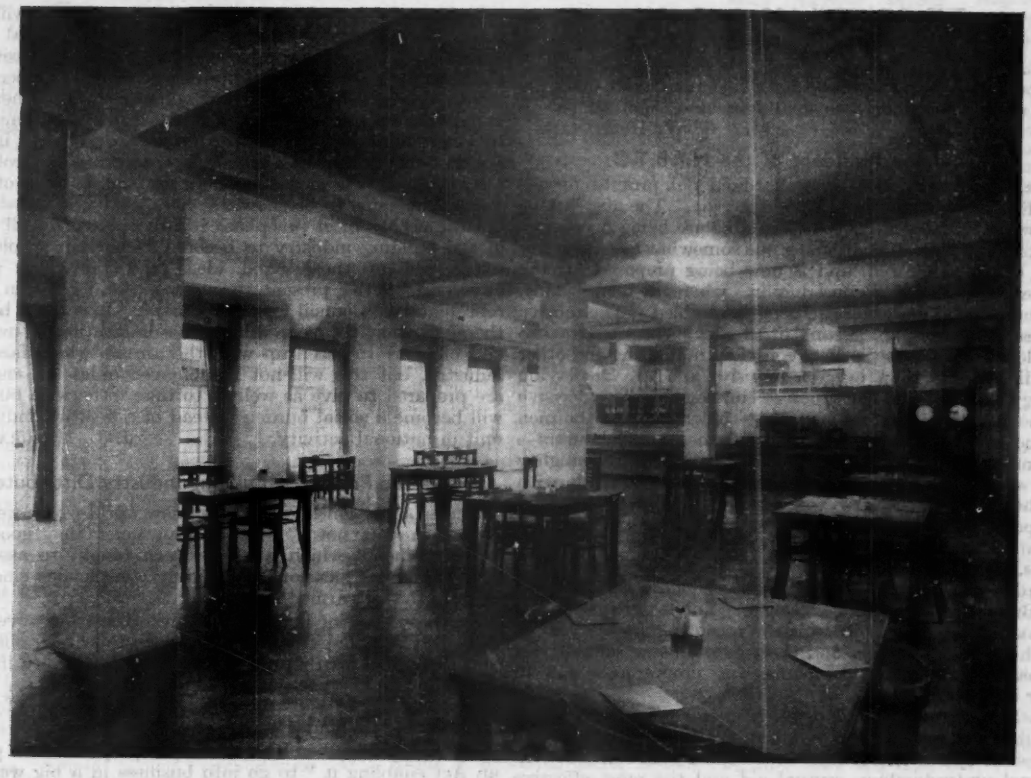
NURSES' HOME, QUEEN CHARLOTTE'S MATERNITY HOSPITAL, GOLDHAWK ROAD



THE ENTRANCE HALL.

NURSES' RECREATION ROOM.

NURSES' HOME, QUEEN CHARLOTTE'S MATERNITY HOSPITAL, GOLDHAWK ROAD



THE RESTAURANT.

THE MAIN KITCHEN.

NURSES' HOME, QUEEN CHARLOTTE'S MATERNITY HOSPITAL, GOLDHAWK ROAD

THE INDUSTRY LOOKS AT 1946.

(*Continued from page 27.*)

heart. There are difficulties here and there—there always will be—but with good will on both sides, and there is ample good will on both sides, we shall overcome them all.

G. W. BUCHANAN.

From the President of the N.F.B.T.O.

SIR,—There are many signs that hold rich promise for the building industry during the coming year. The obstructive factors in the way of practical building are being overcome, and one can view the national scene somewhat as a huge site that has been cleared, and is now being prepared for the immense work of reconstruction, whereon men, plant, machinery and materials are being assembled. The motive forces in building are getting up steam. The Government and local authorities are more conscious of housing and other building needs than ever previously, and are displaying energy and drive in constructive endeavour. The decisive elements in the building industry—the employers, the men in the building professions, the craftsmen and labourers—are mustering their powers and capacities for the mighty task ahead. The great start can, and must, be made with the beginning of the New Year, and proceed with increasing tempo as the days go by. The building industry can build the millions of houses required, can rebuild the towns and cities, can lift the country from out of its present structural disorder and degradation and physically equip and modernise Britain for its future greatness. Let every one do his utmost to ensure that 1946 is the most memorable year in the history of building, and that very substantial progress is made with the many schemes and programmes now in their initial stages.

Building is a work of detailed co-operation. It is impossible too strongly to emphasise the necessity of the closest co-operation between all occupied with construction. Mutual understanding, mutual aid and the most effective team work are required between those who plan, manage and direct, and those who contribute their labour and skill in the crafts and trades. The worthiest and speediest production can only result from a spirit of good fellowship on the jobs, from top to bottom, permeating every endeavour. That spirit must be fostered and developed in every way. By next June there will be over a million operatives engaged in the building industry. It is absolutely necessary to imbue this gigantic labour force with this warm, generous, comradely and co-operative spirit, so as to raise its industrial morale to the highest pitch, and to call forth the utmost interest, energy and enthusiasm for the work to be done. If the building industry will guarantee that all these workers have decent livelihoods, that their human welfare is cared for while giving their services to building, and that from start to finish operations are carried out on the sites in an orderly systematic manner, there is no doubt they will display the same determination, endurance, capacity and courage as were displayed in achieving the massive war-building programme.

The New Year heralds the biggest constructive adventure of all time. Let us make it the most fruitful and glorious.

J. W. STEPHENSON.

From the President, Federation of Associations of Specialists and Sub-Contractors.

SIR,—I feel that the doubts and perplexities which beset me as to what 1946 will bring the building industry are common to most people, whether professional advisers, employers or operatives, and I ought to add, customers.

In a period in which maximum production is essential, it would appear to be most unwise from the national point of view to introduce new conceptions of organisation and construction unless it is proved that they will accelerate the "delivery of the goods." Much ill-informed criticism has been made during the last few months concerning the profit motive and private ownership, commonly interpreted as "private enterprise." This still remains, however, the basic principle in the affairs and conduct of every section of the community, whether employers or employed, and without it human activity on the whole would result in stagnation instead of purposeful endeavour.

It is to be hoped that the building industry will not become an objective for political and ideological controversy. The attempt to enthuse on the necessity of Government and local authority control and operation seems, however, a step in this direction. Whether the underlying idea of this is the political one of attempting to chain and manacle private enterprise so that it will not be able to prove the sterility of State control and ownership, or whether it is the more simple issue of job-seeking, remains to be shown.

However, to meet this phase it is necessary for all parts of the building industry to become a coherent whole and to get rid of those fixed ideas and prejudices which have, up to the present, prevented the formation of a representative Council for the industry. It is to be hoped, therefore, that the year will show a unification of purpose and of effort to catch up with the arrears which face this industry, but this will not be achieved unless all engaged are prepared to give as well as to take, otherwise building will become a social burden instead of a healthy industrial unit in national activity.

J. L. MUSGRAVE.

From the President, Building Industry Distributors.

SIR,—Let us consider the brave new world which we hope to see in this new "Peace" year, since the "good will amongst men" which we have been taught to associate with Christmas has not been unduly conspicuous since the close of the late armed hostilities.

In the matter of housing the authorities who govern us seem to resemble gymnasts who create their own obstacles and difficulties as they go along; there are many impediments put in the path of the individual builder, the traditional supplier of houses and the actual supplier of three-quarters of the houses built between the two wars.

The Government in its wisdom has prepared and passed an Act enabling it "to go into business in a big way" in the manufacturing and distributing of building trade supplies. Was this journey—into a realm of operations which neither politicians nor civil servants understand—really necessary? The stockholding builders' merchants, many of whom have a proud record of over 100 years service to the trade, do not recognise any distribution problems beyond those imposed by controls, labour and supply shortage. This supply shortage is due in part to available supplies being "frozen," in part to arbitrary restrictions, but in the main to shortage of labour in manufacturers' works. Many works to-day have less labour than they had on VE day.

Pre-war, without assistance, regimentation or guidance builders' merchants backed by a large number of manufacturers served the building industry to such purpose as enabled it in 1938 to complete, at about half to-day's cost, approximately 375,000 houses, or 7,000 houses per week, plus the requirements for industrial buildings, repairs and conversions. The productive capacity of the many manufacturers behind this achievement was fully capable of stepping up supplies to 500,000 houses per annum. This is still the case subject to release from war contracts and release of labour and raw materials.

On the other hand, it is very doubtful whether the Government can carry on the business into which they have taken power to enter. The technical knowledge necessary for the economical and efficient distribution of building materials and components has only been acquired by the trade as a result of long experience of stocking, handling and distributing. The Government do not possess the organisation nor the trade knowledge necessary for the distribution all over the country of the large number and varied nature of building materials and components used in housing.

Therefore, if the necessary number of houses are to be built in anything like the time desired—and every citizen of intelligence and good will ardently desires that they may be provided—this will, in my opinion, only be done provided the builders are allowed to build freely, established manufacturers are permitted facilities to make the goods required and builders' merchants are given full liberty to distribute them.

DUDLEY PRYKE.

SOME THOUGHTS ON HOUSING

PREFABRICATION: PROBLEMS AND OPPORTUNITIES.

By Jack Howe, A.R.I.B.A.

"DURING the 10 to 12 years following the end of the war, three to four million houses must be built if every family who so desires is to have a separate dwelling." This statement was made in October, 1943, by Mr. Ernest Brown, the Minister of Health, and has been accepted as the target for the greatest housing programme which this country has had to undertake. Since this date, countless speeches have been made by Government spokesmen from the Prime Minister downwards, and large numbers of official publications and reports have been issued. The needs, therefore, are known and the problem now is how to bridge the wide gap between reports and recommendations and any action based upon them. It is agreed that the building industry alone, using orthodox methods, will not be able to approach the target figure, and thus a number of systems of prefabrication have been evolved designed to produce a higher standard in a shorter period, using production capacity and labour mainly outside normal building.

What Kind of Housing?

Another question is, What kind of housing should be provided? Fortunately, the controversy on the subject of flats *versus* houses, which has for some time past absorbed the time and energy of so many people, including architects and planners, who ought to know better, has been obscured by the more recent verbal battles centred around prefabrication. Much of the prejudice against living in a flat, felt by people who would otherwise choose this type of accommodation, is due to the technical incompetence displayed in the design of a great many of the blocks built before the war, such as bad orientation, and an almost complete disregard for proper sound insulation. This, combined with an absence of the compensating amenities which can be provided for flat dwellers in a well-planned layout, makes it difficult to determine how people would react to a skilfully designed scheme. A Gallup survey is of little value in this case, because those people already living in a house will by custom have grown to prefer their surroundings, having experienced no other condition, whereas, those occupying flats will invariably have suffered from the discomforts which I have mentioned. It was therefore encouraging to hear Mr. Aneurin Bevan, when speaking at the A.B.T. Housing Conference in November, declare that he was in favour of building blocks of high, well-designed flats as an experiment, and that plans were going forward at an early date. To complete the experiment, I would suggest that this project be planned as part of a laboratory town containing every type of building and amenity necessary for the life of a community. This will bring the town planner into the picture, to determine in what proportion and in what manner the various units should be provided. We cannot afford any longer to erect isolated housing schemes without the essential accompaniment of schools, shops, theatres, cinemas, nursery schools, community centres, churches and public houses. Not only are these buildings indispensable to an ordered society; they are, in themselves, vital ingredients of an intelligently conceived plan. Without them, any housing layout will lack articulation and be dull and monotonous, however excellent the individual houses may be.

The prejudice against flats is shared to some extent by the terrace house, although this form has been strongly advocated in official reports. The reason is the legacy of squalid ill-planned rows inherited from the last century, which were crowded into the smallest possible area without imagination or amenity. People, in their natural revulsion against these horrors, forget the standard of beauty and distinction set by the terraces of the eighteenth century.

Of all the more recent developments in building, there is no doubt that the technique of prefabrication is the most important and the most controversial. It is also the most misunderstood. I cannot, in the space at my disposal, deal with all of the technicalities of this very complex subject, but I would like to clear up one or two misconceptions and comment on some of the more interesting schemes produced to date. First, prefabrication is not confined to a particular type of building, but is a method of manufacture for which almost any kind of structure can be designed, provided there is sufficient outlet to justify the initial cost of setting up factory plant, jigs and tools, for large-scale mass production.

Opportunities of Prefabrication.

For those who believe that this technique has considerable advantages to offer as a means of producing better housing within the financial grasp of everyone, it was disappointing that it should have been chosen as a means of producing temporary bungalows. Mr. Churchill's reference in his broadcast, on March 26, 1944, to "what are called the prefabricated or emergency houses," was not well phrased. Prefabrication became associated with emergency or makeshift methods, and it will be some time before the idea is dispelled. The Portal house failed, but it must be remembered that it was one of the first in the field, and its faults probably gave more valuable data to those following than if it had been an unqualified success.

FIG. 1.

Another aspect of prefabrication is that it is ideally the solution to a long-term programme, and is in many respects a reversal of traditional methods. In the latter, it has become customary to do the minimum amount of pre-thinking with the sure knowledge that the general foreman will get us out of our troubles and solve our unforeseen problems. But with large-scale factory production in view, nothing can be left to chance. Every detail must be carefully planned and considered from many different aspects, models and prototypes made up, sub-assemblies tried out, and every possible precaution taken to ensure that no error can arise during production, when tools costing many hundreds, or even thousands, of pounds have been made. All this requires a large and complex organisation, both during the designing stages and when the houses go into production. Innumerable factors, not met with in normal building, must be taken into account. In the first place, materials must be selected not only for their suitability for purpose, but their availability over the required period must be ascertained and production capacity checked, so that output will be maintained at the required rate. This often means further probing into the production of raw materials used in the manufacture of composite products. The correct phasing of component production is, therefore, vital, and its importance must not be underestimated.

Added to this, there are the questions of manufacturing and erection tolerances, site and factory inspection, handling—here the entire design of a component may be determined by the decision as to whether it can be man-handled or whether mechanical moving equipment can be economically employed—transport, with its attendant problems, involving possible design of special rolling stock or road vehicles, storage, crating, protection and distribution.

I have mentioned the above points in order to show that prefabrication is not suited to the short-term housing policy. Considerable time is bound to elapse before output is likely to justify the preparatory work and cost, but, ultimately, there is no question that traditional methods will be left far behind. The accompanying time-output graph, Fig. 1, illustrates these facts, although it is not drawn to show actual comparative figures.

So far, I have not dealt with erection, which is yet another matter, requiring careful thought and planning. There is a widespread view that prefabricated structures can be put up by unskilled labour. This is a wrong assumption, although it is true that there is little site work for the normal building tradesman once the components have left the factory. A new trade, however, is evolving, which is that of assembler, and it is a highly skilled task, requiring a very complete knowledge of the particular job. In order to produce such an operative, training schemes have had to be devised and erection instructions produced, giving, stage by stage, the complete assembly. This assembly drill is, itself, most important and must be based on a properly studied motion and time survey of the various operations and sequences.

New Wine and Old Bottles.

Referring back to Fig. 1 it can be seen that traditional methods and prefabrication in the same building will not easily mix, as it is only over a limited period that the one can keep pace with the other. For example, in the case of the Arcon Mark V house, it was decided by the Government that the orthodox concrete slab foundation should be employed. This appeared to be satisfactory while the factory output rate of houses was still low, but now that component production is well under way, stores are becoming over-filled and site preparation is lagging far behind. In the original design the house rested on six small piles, which meant a considerable saving in *in situ* work, particularly on sloping sites. Had this arrangement

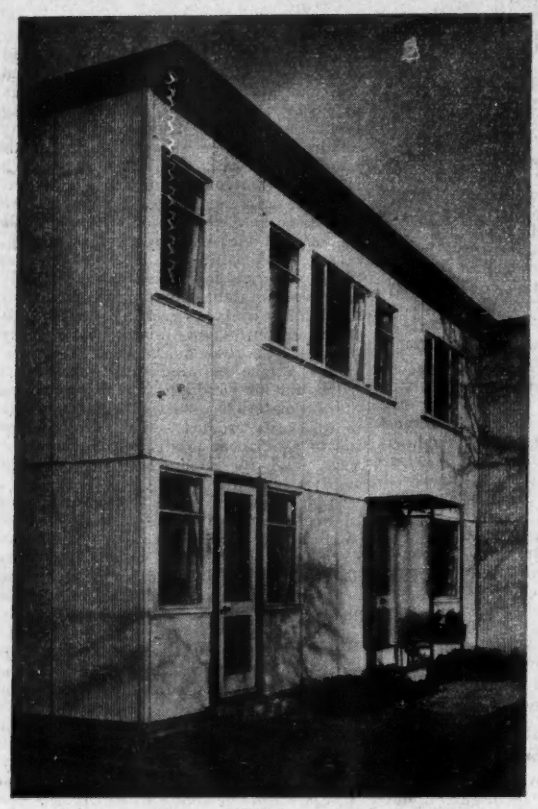


FIG. 2.

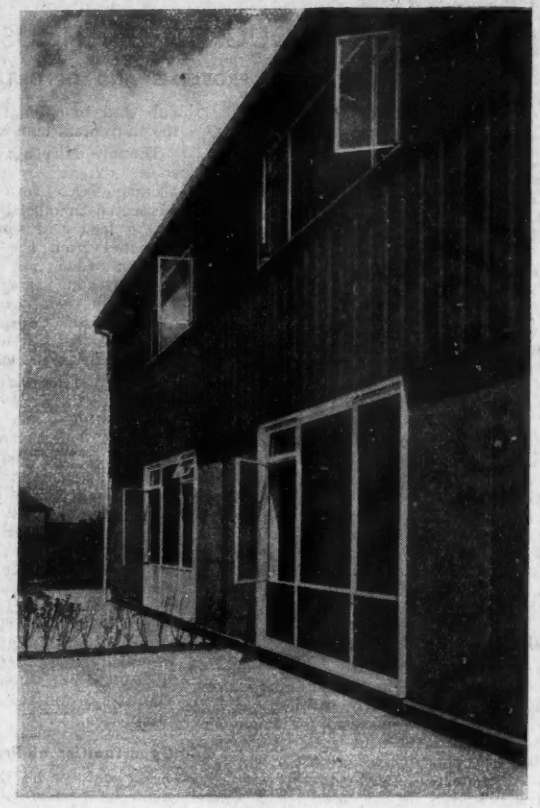


FIG. 3.

Fig. 2.—A house designed on the Braithwaite unit construction system, developed to provide a flexible method of house construction. Plan area is unlimited and 1-4 storeys may be erected of standard units. The architect is F. R. S. Yorke, F.R.I.B.A. *Fig.* 3—Shows a permanent prefabricated house, P.1, built as a laboratory prototype for later type P.2. Architects : Arcon.

FIG. 4.

FIG. 5.

Fig. 4.—The B.I.S.F. "A" type house, semi-prefabricated, with a standard hot-rolled steel frame and steel trough cladding to first floor. It has since been redesigned to give 100 per cent. dry construction. Architect : Frederick Gibberd, F.R.I.B.A. Engineer : Donovan H. Lee, M Inst.C.E. *Fig.* 5.—The Mark V temporary house of which 42,000 are in production. Architects : Arcon.

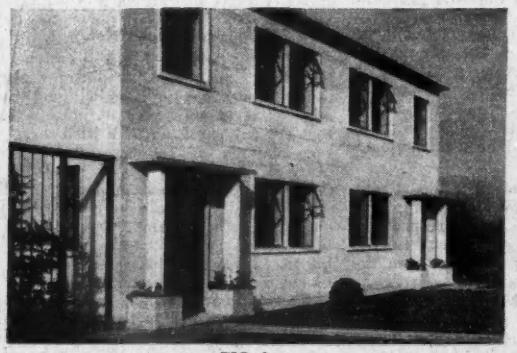


FIG. 6.

FIG. 7.

Fig. 6.—The Orlit House, of all concrete prefabricated construction. Architect : E. Katona, M.Inst.R.A. *Fig.* 7.—The Howard House. Completely factory-made, now in production. Kitchen, bathroom and w.c. are placed between the two houses, concentrating noise and enabling kitchens to be made as complete structures. Architect : Frederick Gibberd, F.R.I.B.A.

been adhered to the present bottleneck might have been avoided. This point is stressed because of the need for a thorough investigation into site work and services with a view to bringing them more in line with the assembly of the houses themselves.

It is not possible to describe in detail the various types of prefabricated houses that have been evolved during the last few years. Many of them died a natural death and others did not get beyond the "good idea" stage. Those systems which have survived have done so mainly because their authors understood the implications of what they were doing and were prepared to establish a large organisation to cope with the many complexities to which I have already referred.

Of the two main forms of prefabricated house, the first and most common consists of a structural frame of steel or concrete with an outer weather-resisting cladding and an inner lining incorporating the thermal insulating material. The other aims at combining the three functions in single load-bearing units. A further general dividing line has on one side the completely prefabricated house allowing of no deviation, and on the other a system of universally applicable units which can be arranged to give variations in planning and accommodation. An example of the later is the Braithwaite system (Fig. 2) which it is claimed can also be employed for the construction of multi-storey flats.

The Effect of Timber Shortage.

One of the limitations which has had both a restrictive and stimulating effect on design in this country is the shortage of timber. For many years, successful factory made wooden houses have been produced in America and Sweden, but owing to reduced imports during the war we have been forced to find alternatives. In some cases, such as the new forms of asbestos cement cladding, useful additions have been made to the limited fund of available materials.

Another valuable contribution made by prefabrication is the production of factory made plumbing and service units. It is here that very great economies in time and advances in efficiency are possible. Two main types of unit have been produced. The back-to-back kitchen and bathroom unit and the vertical two-storey stack. Development in this field has been rapid for even the latter is now becoming obsolete, it being realised that whereas there are some undoubted advantages, it is wasteful to produce a structure capable of supporting heavy loads in order to hold a few pipes and provide fixing for cladding panels. Complete units are tending to give way to smaller pipe assemblies easier to handle and less restrictive to planning.

The illustrations (Figs. 2 to 7) show some representative examples of prefabricated and semi-prefabricated houses which are likely to make a definite contribution, both technically and æsthetically to housing development. I have not attempted to describe the systems of construction as they have all previously been reviewed in detail in *The Builder*.

These are a few thoughts on a vast subject. I have placed the accent on prefabrication as I consider it to be the most far-reaching single development in building. To predict its future is not possible because we have not yet conclusive experience of production, erection and marketing, which in their turn will react back to design. What we have to do is to strive to gain that experience in order to produce with the minimum of delay a separate house for every family.

NOTES AND NEWS

New Year Honours.

We offer our congratulations to the following recipients of the O.B.E., announced on Wednesday: Mr. Arthur Bailey, A.R.I.B.A., Chief Technical Adviser Ministry of Labour; Mr. C. M. Barnes, Surveyor to East Barnet Council; Major F. Durkin, Borough Engineer of West Hartlepool; Mr. L. W. Hutson, Director of Building Materials, M.o.W.; Mr. S. H. G. Kent, Technical Adviser, S.W. London, War Damage Commission; Mr. F. I. Lloyd, Principal Officer, M.o.W.; Mr. S. Mehew, Derbyshire County Surveyor; Mr. E. Minors, Darlington Borough Surveyor; Mr. C. J. Minter, York City Engineer; Mr. E. E. Morgan, F.R.I.B.A., Swansea Borough Architect; Ald. W. E. Mullen; Mr. V. T. Sulston, Regional Secretary, London, N.F.B.T.O.; Mr. W. C. Walker, Chairman Advisory Committee, S. Region, W.B.O.; Mr. W. V. Hastie, Chief Licensing Officer, M.o.W.; and Mr. J. Weekes, Dunbarton County Architect.

Employment in Building.

The reappearance of periodic tabular statements of the actual employment in the principal industries, in pre-war days a useful feature of the *Ministry of Labour Gazette*, is welcome. The December issue shows the following figures for Building and Civil Engineering: Mid 1939, 1,206,500; Mid 1945, 632,000; October 1945, 719,800.

War Damage Commission Appointment.

The War Damage Commission has appointed Mr. H. B. Usher, Deputy Secretary of the Commission in the place of Mr. M. E. Rowe, C.B.E., K.C., who has been released from the public service to return to practice at the Bar.

Leeds City Architect's Department.

Mr. R. A. H. Livett, O.B.E., F.R.I.B.A., Housing Director of Leeds since 1934, has been appointed head of the City Architect's Department, with Mr. P. B. Haswell, A.R.I.B.A., as Deputy City Architect. The post of Housing Director will disappear.

COMING EVENTS

Friday, January 11.

R.I.B.A. Opening Day of Two-Day Conference on "Human Needs in Planning." 66, Portland-place, W.1. 10.30 a.m.

Saturday, January 12.

Ecclesiological Society. Mr. B. W. T. Handford on "Lancing School Chapel." St. Martin's School of Art, W.C.2. 3 p.m.

Tuesday, January 15.

Institution of Civil Engineers. Mr. A. Ramsay Moon on "Shop and Site Welding." Great George-street, S.W.1. 5.30 p.m.

R.I.B.A. Mr. Gordon Stephenson on "The Planning of Residential Areas." 66, Portland-place, W.1. 6 p.m.

Thursday, January 17.

Institute of Welding. Sir Claude Gibb's Presidential Address. The Mining Institute, Newcastle-on-Tyne. 6.15 p.m.

Southern Counties Federation of Building Trades Employers. Annual meeting. Speaker: Mr. G. W. Buchanan. Luncheon. Speaker: Mr. Stanley Hearder. Connaught Rooms, W.C.2. 1.15 p.m.

London Master Builders' Association. Annual meeting. Dorchester Hotel. Speaker: Mr. G. W. Buchanan.

Design and Industries' Association. Mr. Ian Jeffcott, L.R.I.B.A., on "Design of Interior Exhibitions." London School of Hygiene, Keppel-street, W.C.1. 7 p.m.

Friday, January 18.

Oil and Colour Chemists' Association. Mr. G. Grenfell Baines on "Use of Colour in Buildings." At Engineers' Club, Manchester. 2 p.m.

Institution of Sanitary Engineers.—Mr. G. S. McDonald delivers Presidential Address. Caxton Hall, S.W.1. 6 p.m.

Saturday, January 19.

Fabian Society.—Conference on Housing. Speakers, Mr. Harold Wilson, M.P., Mr. Henry Braddock, Sir Ernest Simon and Major D. Bruce, M.P. (Continuing over Sunday.) Wayfarers' Restaurant, 20, Granville-place, W.1. 2.30 p.m. (Sunday, 11.15 a.m.)

Professional Announcements.

Mr. E. H. Skipper, F.R.I.B.A., of Messrs. Fredk. W. Skipper and Son, Chartered architects and surveyors, formerly of 55, London-street, having been released from Government service, has opened offices at 4, Theatre-street, Norwich (tel: Norwich 22940). Trade catalogues are desired.

Captain G. E. Bright, R.E., A.R.I.B.A., architect for the Cathedral of the Holy Trinity, Gibraltar, having been released from H.M. Forces, has opened temporary offices at 28, Great Castle-street, Oxford-circus, London, W.1 (tele.: Mayfair 4761/2).

Mr. L. Mason Apps, A.R.I.B.A., A.M.T.P.I., who has recently returned from service overseas with the R.A.F., has reopened practice at 11, Granada House, Maidstone, and at Sutton Valence, and will be glad to receive trade catalogues.

Mr. Stanley F. Ashby, A.R.I.B.A., has been appointed Surveyor to the Baptist Union Corporation, Ltd., and will be pleased to receive trade catalogues and data relating to the availability of materials at his office, Baptist Church House, 4, Southampton-row, London, W.C.1.

Mr. Sidney Morris, L.R.I.B.A., M.Inst.R.A., and Mr. H. F. Riley, L.R.I.B.A., have become partners under the title of Morris and Riley, LL.R.I.B.A., with offices at "Orleans House," Edmund-street, Liverpool, 3, and will be glad to receive trade catalogues, etc.

An amalgamation has been arranged as from January 1, between Messrs. Daniel Watney and Sons, Messrs. Eiloart, Son and Inman, and Messrs. T. C. Nunn. The name of the joint firm will be Daniel Watney Eiloart, Inman and Nunn. Mr. Dendy Watney, F.P.S.I., L.R.I.B.A., former senior partner in the firm of Daniel Watney and Sons, retired on December 31, 1945, but has agreed to act as consultant to the joint firm. Until such time as their permanent offices can be reconditioned, following war damage, the practice of the joint firm will be continued from their present temporary address, The Charterhouse, Charterhouse-square (telephone: Clerkenwell 4414/9).

Mr. D. G. Burrell, P.A.S.I., has transferred his practice to 15, Strand, W.C.2, where catalogues will be welcome.

Mr. E. Denis Knight, P.A.S.I., F.I.A.S., chartered quantity surveyor, has set up in practice at 248, Ditchling-road, Brighton, 6, Sussex (telephone: Preston 3112).

Mr. E. G. Underwood, F.S.I., chartered quantity surveyor, announces that Mr. Dennis Osman, P.A.S.I., has joined him in partnership as from January 1. The practice will continue at 1, Northumberland-buildings, Queen-square, Bath, under the title of W. E. Underwood and Son.

Messrs. Howard and Perry, quantity surveyors, have taken into partnership Mr. R. H. Willis, P.A.S.I., and are now in practice as Messrs. Perry and Willis, Vincent House, Vincent-square, S.W.1 (telephone: Victoria 8051). Trade circulars and catalogues would be welcomed.

Mr. John T. Sinclair, P.A.S.I., chartered surveyor, has commenced private practice as a quantity surveyor at 42, Lynmouth-road, London, N.16 ('phone: Stamford Hill 2791), and would be pleased to receive trade publications and catalogues.

Mr. John Leaning, P.A.S.I., on release from the Army, has decided to relinquish his partnership in the firm of John Leaning and Sons, chartered quantity surveyors, of 28, John-street, Bedford-row, W.C.1. As from January 1, the practice will be continued under the same title and at the same address by the remaining partners, Mr. F. C. Thompson, F.S.I., and Mr. E. W. Leaning, F.S.I.

From *The Builder* of 1846.

Saturday January 10.

New Works at the Post Office.—In order to obtain additional accommodation at the Post Office, St. Martin's-le-Grand, two new rooms, of large size, have been formed for letter sorters over a part of the present building, under the direction of Mr. Sydney Smirke. As the span is considerable, and it was desired to occupy as little space with the floor as possible, a series of iron niches has been introduced, to support at the same time the roof and (by means of suspending rods) the timbers of the floor.

***This work created something of a sensation at the time. The Post Office was, 62 years later, the scene of the first large-scale reinforced concrete building, designed by Sir Henry Tanner, using Coignet's system.

PROFESSIONAL CONDUCT

ARCHITECTS' REGISTRATION COUNCIL'S CODE

THE Architects' Registration Council of the United Kingdom has issued the "Code of Professional Conduct" * (sanctioned by the Council on December 14. 1945). Following is the full text :—

CODE OF PROFESSIONAL CONDUCT

The following rules have been drawn up for the guidance of architects, in the form of the principles which should be observed by an architect in his professional work, followed by examples to illustrate conduct which might be regarded as a breach of the principles stated.

The object of the rules is to provide a general standard of professional conduct. It is not intended to lay down hard and fast lines between what is and what is not legitimate. It will be for the Discipline Committee, on inquiry in the manner provided in Section 7 of the Architects Registration Act, 1931, to determine in any particular case whether the architect has been guilty of disgraceful conduct.

The examples are not intended to be exhaustive. There will be other cases of conduct, not included in the examples, which could reasonably be regarded as infringing the principles of the Code, and, if complaint is made, it will be for the Council and the Discipline Committee to consider whether the offender has departed so seriously from the principles of conduct clearly laid down in the Code as to be guilty of disgraceful conduct.

Architects are recommended to bring this Code to the notice of their staff :—

PRINCIPLES.

I. An architect must faithfully carry out his duty to his client.

II. The services of an architect in private practice must be remunerated only by professional fees payable by his client based on a recognised scale, and the client should be informed in advance of the scale of charges to be applied, and the conditions of engagement.

An architect must not accept payment or other consideration from any source other than his client in connection with the works and duties entrusted to him, and must not allow any member of his staff to receive such payment or consideration.

An architect may be paid by salary agreed with his employer.

III. The growth of an architect's practice should depend on merit. He must not advertise or tout for business or allow any member of his staff so to do. Nor may he (save to members of his staff) give or offer remuneration, or other consideration, for the introduction of clients or of work.

IV. An architect must at all times apply the conditions of a contract with entire fairness between employer and contractor. In all questions arising between the employer and contractor and in all cases in which an architect is acting between parties, he must act in an impartial manner.

V. An architect must not carry on his practice in the form of a limited liability company, nor may he do any act which will have the effect of avoiding his responsibility to his client.

VI. An architect must at all times, with due regard to the interests of his client, act loyally towards his professional colleagues.

VII. An architect must not, while practising his profession, carry on or engage in any operation of trade or business inconsistent or out of keeping with the fitting and proper discharge of his professional duties.

VIII. An architect must not assume or consciously accept a position in which his interest is in conflict with his professional duty.

EXAMPLES.

I. An architect must faithfully carry out his duty to his client.

II. The services of an architect in private practice must be remunerated only by professional fees payable by his client, based on a recognised scale, and the client should be informed in advance of the scale of charges to be applied, and the conditions of engagement.

An architect must not accept payment or other consideration from any source other than his client in connection with the works and duties entrusted to him, and must not allow any member of his staff to receive such payment or consideration.

An architect may be paid by salary agreed with his employer.

For example :—

(i) An architect must not accept any discount, gift, commission or other payment or consideration from contractors or tradesmen, whether employed upon the works or not.

(ii) He should inform his client as to the fees payable in respect of quantities and for measuring and valuing variations and preparing and agreeing final account, and that the same fees are payable whether the quantities are taken out by the architect himself or by a quantity surveyor. In either case fees in respect of quantities should be paid directly by the client and not through the contractor.

(iii) He must not permit the insertion of any clause in tenders, bills of quantities or other documents which provide for payments to be made to him by the contractor, whatever may be the consideration.

(iv) The only scales of fees and conditions of engagement recognised are those published by the R.I.B.A. or the other constituent bodies of the Council referred to in the First Schedule of the Architects (Registration) Act, 1931, paragraph 1, subparagraphs (ii) to (vi).

III. The growth of an architect's practice should depend on merit. He must not advertise or tout for business or allow any member of his staff so to do. Nor may he (save to members of his staff) give or offer remuneration or other consideration for the introduction of clients or of work.

For example :—

(i) An architect must not advertise, either by name or anonymously, nor may he offer his services by means of circulars or otherwise.

(ii) He must not make paid announcements in the Press, but he may insert one notice of change of address in the Press, and may insert advertisements in the Press relating to appointments vacant or required.

(iii) He may not give discounts or commissions in recognition of, or as an inducement to, the introduction of clients, but there is no objection to suitable remuneration being given by architects to their assistants who have introduced clients.

(iv) He must not tout for business by submitting plans to possible clients without being requested so to do.

(v) The title "architect" may not be displayed on fascia boards or on shop windows, nor may it be displayed ostentatiously outside the office premises. The architect's name and affixes and his professional title may be shown at the entrance to his office premises in letters not exceeding 2 in. in height. An architect may sign his buildings and may exhibit his name on buildings in the course of construction, alteration or extension, provided that it is done in an unostentatious manner.

(vi) Although there is no objection to an architect allowing signed illustrations and descriptions of his work to be published in the Press, no monetary consideration may be given by the architect for such insertions.

(vii) When an architect is acting as surveyor or town planner in connection with the development of land, announcements may be made in the Press and on notice-boards in connection with such development, provided that such announcements are made in an unostentatious manner and are not paid for by the architect.

IV. An architect must at all times apply the conditions of a contract with entire fairness between employer and contractor. In all questions arising between the employer and contractor and in all cases in which an architect is acting between parties, he must act in an impartial manner.

For example :—

(i) He should take the earliest opportunity to explain to his client the conditions of the contract.

(ii) The fact that the architect is being paid by his client must not be allowed to influence his responsibility for the proper fulfilment of the contract between the parties.

V. An architect must not carry on his practice in the form of a limited liability company, nor may he do any act which will have the effect of avoiding his responsibility to his client.

VI. An architect must at all times, with due regard to the interests of his client, act loyally towards his professional colleagues.

For example :—

(i) He must not attempt to supplant another architect, nor must he compete with another architect by means of a reduction of fees or by any other inducement.

(ii) He must, before accepting instructions to proceed with any work upon which it is obvious another architect has been employed, notify the architect last employed.

(iii) He must not act as architect or joint architect for a work which is or has been the subject of a competition in which he is or has been engaged as assessor.

(iv) He must not act as architect or joint architect for a work which is or has been the subject of an abandoned competition if he is or has been officially nominated as assessor by the promoters.

(v) He must not copy the design of another architect without the consent of the latter, but where an architect is properly employed on the extension of works designed by another architect and the proper execution of the work requires that the original design shall be extended to the new work, the consent of the original architect shall not be unreasonably withheld, nor shall excessive terms of compensation be demanded.

(vi) An architect who is appointed in accordance with Section 17 of the Archi-

* Published from 68, Portland-place, W.1.

tects Registration Act, 1931, as superintendent to control and manage the architectural business of a firm or company must arrange with his employers that the business of the firm or company, so far as it relates to architecture, is conducted in accordance with the principles of this Code, and if he is unable to ensure this, it is his duty to report the facts to the Architects Registration Council.

VII. An architect must not, while practising his profession, carry on or engage in any operation of trade or business inconsistent or out of keeping with the fitting and proper discharge of his professional duties.

For example :—

(i) An architect may not carry on business as a builder or manufacturer of or dealer in materials used in building, or act as director, principal, partner or manager of a company or firm carrying on any such business, nor may he be financially interested in any such business to so great an extent as might or would be calculated to affect the independent exercise of his professional judgment.

(ii) It is considered unfitting for an architect, while following his profession, to carry on business or to control a company which carries on business of a speculative character in land or buildings.

(iii) He must not recommend nor allow his name to be used as recommending specific building materials in advertisements in the Press or otherwise.

(iv) He may be architectural consultant or adviser to building contractors, decorators, furniture manufacturers, estate development firms or companies, or firms or companies trading in materials used in, or whose activities are otherwise connected with, the building industry, provided that :—

(a) He is paid by fee, salary or royalty and not by commission on sales or profits;

(b) He does not solicit orders for the firm or company.

He may use the word "architect" in connection with his appointment, and his name and affixes may appear on the stationery of the firm or company as architectural consultant or adviser.

†(v) He must not permit the business of auctioneering or house agency to form part of his business, nor may he control a firm or company engaged in auctioneering or house agency.

(vi) Save as aforesaid, an architect may be a director of any company, including a building society incorporated and registered under the Building Societies Acts and a Housing Association, Trust, or Management Commission as defined in the Housing Act, 1936, and may allow his name and affixes and the word "architect" to appear on the notepaper of the company.

VIII. An architect must not assume or consciously accept a position in which his interest is in conflict with his professional duty.

For example :—

(i) He ought not to act as such for or against a company, of which he is a director, without previously informing both parties to the contract. The same rule should be followed by architects who are members of Committees of Management, Boards of Governors and similar bodies.

(ii) An architect in the salaried employment of a firm of contractors must not accept a professional commission from persons other than his employers in respect of building or other work to be carried out by his employers.

† *Extract from Council Minutes of June 23, 1936:* RESOLVED that—

Where business as an Auctioneer or House Agent was being carried on at the time of registration no action be taken in the matter, but that any Registered Architect attempting to, or who has attempted to, start any business as Auctioneer or House Agent after the date of his registration be informed that such action is not in accordance with the recognised custom of the Architectural profession.

ARCHITECTS REGISTRATION

COUNCIL'S 55th MEETING

THE 55th meeting of the Architects' Registration Council was held at 66, Portland-place, W.1, with Mr. Sydney Tatchell (Chairman) in the chair, on December 14.

Arising from the Minutes, the Registrar read a letter from the Chairman to Major Athoe relating to appeals by architectural assistants against Council's refusal to register. Upon Major Athoe expressing dissatisfaction with the situation, the Chairman suggested that he should give notice of motion so that it could be dealt with on a future occasion.

The resignation, on doctor's orders, of Mr. Basil Sullivan was reported, and the text of the Chairman's letter of sympathy and thanks was read. The R.I.B.A. have appointed Mr. Martin Brooks in his place.

THE CODE OF CONDUCT. This Code, considered at a special meeting of the Council in February last, was submitted to the constituent bodies for their observations, which were considered at a special meeting of the Council in November. The draft code, with amendments, was then submitted to learned counsel for his observations, and finally approved by the Council—Major Athoe, Major Ireland and Capt. Montague Evans dissenting—on December 14. The Code is now published, and is reprinted in full elsewhere.

ADMISSION COMMITTEE. Fifty-one applicants were admitted to the Register and 14 rejected. Of a total of 5,333 applications received, all but 398 have been dealt with. Since the last regular meeting, the appeals of O. M. Farrell (Alnwick), P. B. Goreth (Saltash), E. L. Leeming (Winston) and L. F. A. Maddocks (Bridport) have been allowed, and nine appeals dismissed.

BOARD OF ARCHITECTURAL EDUCATION. On the report of the Board the request came before the Council for the recognition of the examination of the Incorporated Association of Architects and Surveyors. The matter arose in the first instance through a letter from the Incorporated Association of October, 1944, asking whether the Board would approve an Intermediate and Final Examination to be held, based on a syllabus and examination papers to be approved by the Board and held under conditions to be approved by the Board, including the appointment of examiners. The Board, on the advice of the Solicitor, replied that they had no power under the Act to recognise an examination which had not been held. The Incorporated Association countered with counsel's opinion that the Board had the power to recognise an examination that had not been held. The Board thereupon took the opinion of Mr. O'Sullivan, K.C., in which he advised that the matter appeared to be not free from doubt, although he advised that the Board had acted prudently and wisely in refusing to recognise any examination which has not been held, and made it clear that the Board have an absolute discretion in the matter. The Board, therefore, leaving the legal point aside, fell back upon their discretion and have refused to recognise the examination until it has been held and tested.

The Incorporated Association thereupon presented a memorial to the Council (a printed document dated December, 1945) asking the Council to exercise the power which they have to prescribe a regulation recognising the examination independently of the Board. That the Council have this power was decided in a test action before Mr. Justice Clausen in 1934, although he said in his judgment that "having regard to the existence of the Board it seemed obvious that Council would give the greatest attention to its views."

That is the stage that was reached when the Council met on December 14, when, after full discussion,

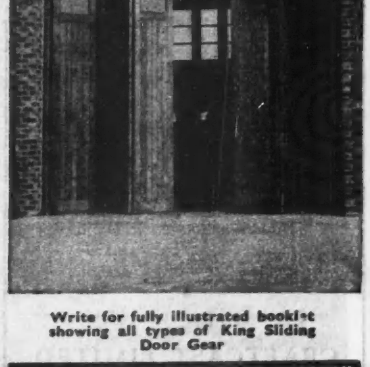
(1) It was agreed that the Incorporated Association's memorial be tabled and considered.

(2) Upon such consideration a motion was moved by Major Athoe "that the Registration Council consider whether the examinations proposed to be held by the I.A.A.S. should qualify persons to be registered under the Architects (Registration) Act, 1931."

(3) An amendment moved by Mr. McKay, President of the Royal Incorporation of Architects in Scotland, "that the Council resolve not to recognise any examinations unless they are advised by the Board of Architectural Education that it is in the interests of architectural education that they should do so," was carried by 24 votes to five.

Thereafter a discussion followed on the question whether assistance should be given to the Incorporated Association in holding an examination which could then be submitted to the Board for recognition. The following resolution, moved by Mr. Jackson, was carried by 22 votes to nine: "That it is the desire of this Council that every assistance shall be given to the Incorporated Association of Architects and Surveyors in re-establishing their examinations in an approved form, and that the Board be requested to consider and report the best method of implementing this desire."

KING SLIDING DOOR GEAR



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A Regency Society, Brighton.

A REGENCY SOCIETY for the preservation of Brighton and Hove has been formed with the object of stemming any indiscriminate destruction of Regency buildings, and to educate public opinion and inspire it with a desire to preserve and value an architectural heritage. The Duke of Wellington, a member of the Council of the Georgian Group, and Sir Charles Reilly, are among the founder members.

WAR DAMAGE REPAIR
ARCHITECTS AND COPYRIGHT

By W. T. CRESWELL, K.C., Hon. A.R.I.B.A., etc.

SINCE the war ended there has been an urgent call for architects' services in making good war damage to premises; and there is no doubt that, as building restrictions are now about to be removed piecemeal in the New Year, architects will be busily employed on this restoration work.

Present conditions make it certain that in many instances the architect commissioned will not be the one who designed the building originally; and this has opened keen discussion as to how far the law of copyright will interfere with the reproduction, by one architect, of the design of another. This prohibition is also stressed by two of their most jealously guarded rules of professional practice, referring to "supplanting" a fellow architect.

We must make two points quite clear. On the one hand, the building owner has a free hand to call in a different architect; but, on the other hand, the design of the undamaged part of the building dictates, materially if not entirely, the design of the part to be restored, and often the latter must copy the former. Speaking broadly, if the original architect has died in the meantime, the copyright in his design is the property of his executors; or, if he were a partner in a firm, his share in the copyright can be claimed by his executors if occasion arises. But in their deed of partnership there may be special clauses which modify this broad rule.

If he is, on the other hand, still alive, he can exercise his rights of copyright, and if he is practising, the architect now commissioned to restore the building will no doubt be guided by the professional code forbidding him in any way to supplant, or compete with, him by contracting for reduced fees or any other inducement to the building owner. So he should get into communication with the original architect before proceeding with the work. It is desirable that, even in the present rush, this courtesy should be continued. If it is not, there is no doubt that the original architect is entitled to exercise his rights (in regard to the new building) under copyright law, that is, to take action if there is infringement. It is preferable that some amicable understanding be established between the two at the outset. This could no doubt be brought about by the second architect offering a financial consideration to the original one.

Now a curious position exists, because it is accepted that plans are the property of the building owner after he has paid the architect's fees, and that he may use them for any purpose other than reproduction, unless his contract with the architect included the right to reproduce—as, for instance, in estate development, where the same type of house is repeated. Generally, for individual buildings, it is not usual for the architect to assign his copyright to the building owner.

We do not recollect any reported case to which reference may be made as precedent for present guidance. But there is a recent case—Meikle and Others *v.* Manfe and Others [1941], 3 All. E.R. 144—where extensions were made to an existing building under an architect, not the designer of that building, and where there had been an obvious copy of the main building. It was held (1) that copyright did subsist in the design of the main building which followed the original architect's designs; (2) that, under the definition of "architectural work" (in respect to which protection is given in the Copyright Act, 1911) the copyright in the design of the building was vested in the architect; (3) that no term of the original architect's contracts could be interpreted as giving the defendants the right to reproduce (which had been done) in the extension, the design of the original building; (4) that the measure of damages was not the amount of profit which would accrue to the second architect due to this infringement; nor the fee which might be charged by the original architect (or his executors or partners) for a licence to reproduce the design, though this last might be taken into account among other circumstances. The plaintiffs were allowed damages in £150.

At the time there was much comment on this case. It arose out of the erection of extensions to Messrs. Heal & Son's building in Tottenham Court-road, London, so as to conform to the general design of the main building. It clearly established that either the original architect should always be employed for an extension or that a licence should be obtained from him (or, in case of his death, his executors) to reproduce any features of an existing building if they are desired in any extension thereof.

It follows that where comparatively modern buildings have been damaged or destroyed during the war, and they are to be substantially rebuilt, there may be a breach of copyright unless proper precautions are first taken to obtain this licence.

CORRESPONDENCE

[Whilst we are glad to publish letters on professional and other matters of interest to our readers, it must be understood that we do not necessarily endorse the remarks of correspondents, who will oblige us if they will express their views as briefly as possible.]

Increasing Building Output.

TO THE EDITOR OF *The Builder*.

SIR,—Before it passes into the limbo of forgotten things, if that is to be its fate, may I be allowed, as the author of the article on this subject which led to all the discussion, to reply briefly to your leading article of December 28? You say that you have doubt about the possibility of an "appropriate body" being able to assess output. But "Operation X" make such accurate estimates of present output neither necessary nor even desirable. And an "approved body" might be a number of persons selected from the institutions and associations most closely connected with the building industry, and comprising, perhaps, quantity surveyors, contractors and trades union representatives.

Then one might, perhaps, visualise the compilation of the rate-book being achieved as follows:—

The "appropriate body" having calculated from the voluminous records of the past (existing in pre-war priced bills of quantities, text-books on estimating, etc.), the average labour component of each separate item of a standard method of measurement bill, they would then agree a target which would be some figure in excess of such average for each item.

In determining the amount at present required in excess of the pre-war figure, they would have many guesses offered, but the necessity for a target to give a suitable incentive is so great that they had much better set an easy target than do nothing. Taking a figure of three hours as the pre-war average for an item, then if the

With target set at—	3½ hours.		4 hours.		4½ hours.	
	Cost.	Bonus rate.	Cost.	Bonus rate.	Cost.	Bonus rate.
		Per hour.		Per hour.		Per hour.
If work done in 3 hours	8/2¼	-/1¼	8/9	-/3½	9/2¼	-/5¼
If done in 2½ hours ..	7/5¼	-/4¼	7/10½	-/6½	8/4	-/8½
If done in 2 hours ..	6/6¾	-/8	7/-	-/10½	7/5¼	1/1

Drop in output is | Time now required is | Cost. s. d.

16⅔ per cent.	3½ hrs.	9 2¼
25 per cent.	4 hrs.	10 6
33⅓ per cent.	4½ hrs.	11 9¾

the effect of fixing the figure for that item at any of these would be as shown in above table.

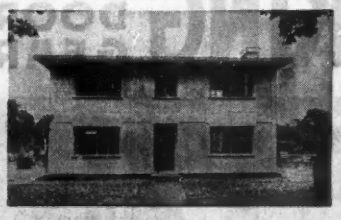
From these figures it is easy to see how beneficial to all parties it would be really to get down to it.

THE AUTHOR OF "OPERATION X."

P.S.—May I express the very sincere hope that your article will renew discussion of the fundamentals of my scheme, and not merely provide ammunition for those, unfortunately always with us, who prefer the maintenance of the methods of the past to any consideration of improvements in the future?

I.A.A.S. Western Branch.

The Western branch of the Incorporated Association of Architects and Surveyors has elected Mr. Kenneth J. Watson as chairman. This branch prepared the Bristol replanning proposal of which an illustration (of the proposed City Centre) was reproduced in our issue of November 16.



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PARKING PLANS FOR MOTOR VEHICLES

MR. SILKIN'S VIEWS

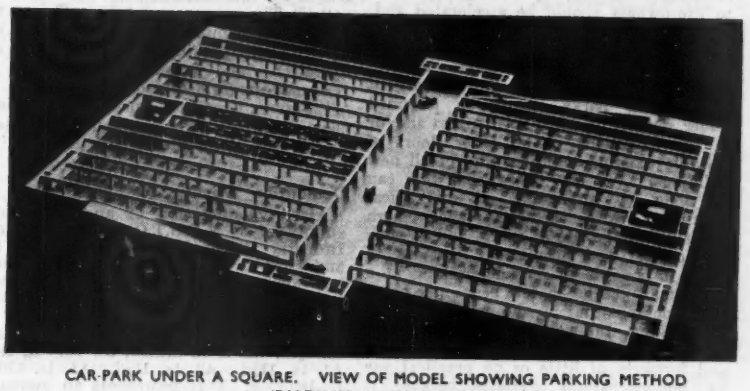
An address on this subject was given by the Minister of Town and Country Planning, Mr. Lewis Silkin, on December 13, to a joint meeting of the Institution of Civil Engineers and of the Municipal and County Engineers.

An indication of the size and growth of the problem could be seen (said the Minister) by the fact that in 1927 the number of motor-driven vehicles in use was 1,680,000, while in 1939, 12 years later, it had risen to 2,714,600. In the large towns there was, even to-day, the utmost difficulty in finding a place in which to leave one's car. Apart from its effect upon amenities and safety, there were two other important aspects of this problem. The first was the delay and inconvenience caused by having to take one's car possibly a considerable distance from one's destination in order to park it, and the threat of prosecution for obstruction constituted a serious loss of efficiency. Second, that the parking of cars along each side of a highway meant that there was a loss to the community of road space equivalent to two lines of traffic, and when one remembered that the cost of street widenings would run into hundreds of thousands of pounds per mile, and in extreme cases had cost as much as £2,000,000 per mile, the cost of sterilising two lines of traffic during the busiest hours would be realised.

"In places where the problem is most acute," continued the Minister, "land is generally both scarce and expensive, and private enterprise unaided has not found it possible to provide car parking on the required scale on an economic basis. For example, the County of London Plan contemplates that in the West End theatreland alone, there is the need for parking 7,000 vehicles. There is no possibility of providing space for this number of cars even in multi-storeyed buildings. To do so, and assuming that such structures were to be built to the maximum height permitted, would require sites of an aggregate superficial area of slightly over 7 acres, and in that comparatively small district this amount of space is simply not available, and even if it were it would be at a prohibitive cost. It follows that in the central areas of our large towns the spaces under squares and other open places must be used to the fullest extent for the provision of public car-parking amenities, and that this should be augmented to the fullest extent by the use of space under or, alternatively, where possible, immediately adjacent to, shops, office buildings, flats, etc.

"Many of the squares in London and the provinces are admirably suited for the purpose of providing underground car parking. It is possible, by using the space below a square or even underneath a large building, to build two or more storeys for car parking. The snag, however, is that when cars are parked in the ordinary non-mechanical manner it is found that in order to gain the necessary capacity of cars they must be closely parked, more or less in the order in which they are admitted, and this results in a congested condition, precluding freedom of ingress and egress, causes lengthy delay in their reception and delivery, imposes a heavy burden in the employment of a large number of attendants, and greatly increases the probability of damage and fire. In order to overcome some, if not all, of these drawbacks, it has been found that some 50 per cent. of the space must necessarily be devoted to unobstructed main and subsidiary corridors. This results in such a waste of space and reduction of car capacity and consequent revenue, that it is economically impossible and this is perhaps the principal reason why car parking, on an adequate scale, has never been provided.

CAR-PARK UNDER A SQUARE. VIEW OF MODEL SHOWING RAMPS.



CAR-PARK UNDER A SQUARE. VIEW OF MODEL SHOWING PARKING METHOD (BALDWIN-AUGER SYSTEM).

"By the ordinary non-mechanical methods of parking, it will be found that some 300 sq. ft. of space per car, and often more, is essential, excluding the space required for ramps or other means of approach to the parking area. Various mechanised systems of car parking have, therefore, been devised, the purpose of which is, in each case, to use the floor space more efficiently. By the introduction of mechanisation, as little as 130 sq ft. per car may be required, thus permitting more than twice as many cars to be parked in a given space, and at the same time effecting a substantial reduction in structural and operational cost.

Mechanical Aids to Parking.

"It is not within my province to express any bias in favour of any particular system of mechanisation, which, in any case, I am not qualified to judge technically, and I cannot go into a lengthy description of the claims for all. As an example, however, I am going to refer to the result attained by the use of one such system which appears to require the smallest amount of space per car. The floor area is divided into movable sections suitable for all sizes of cars, which permits cars to be parked end to end and side by side in more or less 'solid mass,' with only the minimum essential clearance between cars (a matter of inches). Although the floor is divided into such sections, it presents a flush surface, with no impedimenta, thus, for practical purposes and in appearance, differing very little from an ordinary floor. The movement of these sections on

which cars are parked is mechanical and controlled by electric automatic selective gear, so that by the pressing of the appropriate button, the car wanted, whatever its position in the 'mass,' is automatically brought to the 'drive off' position.

"In the light of our knowledge of efficient and up-to-date methods, the parking problem should now be dealt with so as to provide this essential amenity on a sound, economic basis and without delay. In the first place, existing parking and garage accommodation should be scientifically examined and, to the extent that it is necessary to do so, remodelled so as to make it possible to introduce the most modern and efficient methods, thereby greatly increasing the car-parking capacity of such spaces. At the same time, it is important, if the use of these car parks is to be encouraged, that the speed of intake and delivery of cars from and to the owners should be accelerated and, in general, the service to the public improved.

"Second, wherever circumstances permit, in business, shopping and amusement centres, car parks should be provided under squares or other open spaces and/or in the basements or on other floors of suitable existing buildings and of all new buildings. We now know that this can be done by application of mechanical parking, which achieves such high efficiency in the use of space, and at such low capital and operational cost as to make it possible to provide parking at a very small charge—a few pence per hour. It is apparent that by the use of mechanical parking, the valuable and necessarily limited space available in congested areas, and formerly of little or no practical use by non-mechanical methods because it afforded such limited car-parking capacity, can now serve materially to contribute to the great demand for this amenity. And, moreover, it enables parking to be provided close to the places where it is most needed.

"Third, there are a great many 'blitzed' sites appropriately situated whereon large new structures, such as office buildings, flat buildings, trade halls, cinemas, theatres, etc., will be erected, each of which, to serve its own requirements at least, will have to make some provision for car parking. Therefore, in the planning of all new structures, that portion of the space which can be devoted to car parking should, at the outset, be properly planned and constructed so as to be suitable for the installation of an efficient mechanical system. Without this, space in basements or sub-basements or on other floors of such structures would, in many instances, be of little or no practical value as parking spaces or, at best, attain only about half of the capacity made possible by mechanism. Furthermore, the wide spacing of stanchions essential to non-mechanised parking would impose structural difficulties and high costs, whereas the short spans made possible by the mechanical system results in low cost of structure and would permit any type or plan of superstructure most suitable to the remainder of the building.

"I would suggest, therefore, that the time has now arrived when those responsible for ensuring the freedom of the highway and the planning of industrial and social requirements in the congested areas throughout the country, should co-operate and plan so as to be able to apply most modern and improved methods of parking before proceeding with the final plans for such structures. So long as developers of large buildings could depend only on the normal non-mechanised use of their available space for car parking, local planning authorities naturally were reluctant to make it a condition of their consent to the development that car parking should be provided, knowing that in many cases the results obtained would be inadequate and uneconomical. But if methods are now available which remove these limitations, local planning authorities may and should insist on the provision of adequate parking facilities being provided.

"Any system of car parking must satisfy three conditions:—

"(1) It must enable the general public to park their cars at a low cost, at convenient places, thus encouraging them to make use of the car park.

"(2) It must be efficient in its working, and permit of cars being left and taken out in the minimum of time.

"(3) The revenue must be sufficient to provide for capital charges on the cost of creating the parking place, and cost of operation and maintenance with a reasonable margin of profit.

"Figures have been worked out showing that all these conditions can be fulfilled in the case of the mechanical car park."

Demolition Wages.

After consideration of an application submitted by N.F.B.T.O., the Demolition Industry Wages Board decided that as and from the beginning of the first full pay week following January 1 the basic rates for labourers employed on demolition work shall be as follows:—

London District (within 12 miles), 2s. 1½d., (12 to 15 miles), 2s. 1d. A, 2s.; A1, 1s. 11¾d.; A2, 1s. 11¼d.; A3, 1s. 11d.; B, 1s. 10½d. This represents an increase in the London area of 3¼d. per hour.

THE REBUILDING OF HAVRE

THE French Ministry of Information are making much of the rebuilding of the war-bombed port of Le Havre. Under the auspices of the Havre Association of the Bombed Out, and in full agreement with the Ministries of Labour and Reconstruction, the reconstruction of Le Havre has been partially entrusted to students, who are working in partnership with building trade operatives. The French claim that after eight days' training 20 per cent. of the students become good bricklayers. Some 60 dwellings were put up by 250 masons and 600 students. Each house contains a living-room, two or three bedrooms, a shower and a cellar. The foundations are made of salvaged bricks lying on a bed of slag. A mixture made of whitewash and Seine sand is used instead of plaster for the walls. Mortar is made with water, clay and slag. It would be interesting to learn from the French Ministry of Information how far architects have been employed in preparing the site plans and layout, and whether building by-laws are being applied to these buildings. It is officially stated that the reconstruction work in the shipyards "has exceeded all expectations both in its scope and its quality."

TRADE NEWS

Flush Door Manufacturers.

With the object of promoting sales of flush doors, the Association of Flush Door Manufacturers has been formed, the chairman of which is Mr. W. H. Wakefield, of Magnet Timber Ltd., London-road, Grays, Essex, and the vice-chairman, Mr. R. A. Brough, of Leaderflush Ltd., Trowell, Nottingham.

British Paint Manufacturers.

A body of manufacturers representing an important section of the paint industry have formed the Society of British Paint Manufacturers, Ltd. The president of the acting council is Mr. C. J. Heywood (Messrs. Pinchin, Johnson and Co., Ltd.), and the Society's address is Amberley House, Norfolk-street, W.C.2 (Temple Bar 3434).

Change of Address.

Messrs. John Fowler and Co. (Leeds), Ltd., announce that owing to their inability to retain their London offices in Cecil-chambers, Strand, or to regain possession of former offices in Shell-Mex House, they have been forced to seek premises elsewhere, and are now at Byron House, 7-9, St. James's-street, London, S.W.1 (telephone: Whitehall 0484-5; telegrams, Steamplow, Piccy, London).

Temporary Houses: Increased Order.

Messrs. Taylor Woodrow Construction, Ltd., managing contractors to the Government for the Arcon temporary prefabricated house, have received an additional order from the Government for 16,000, bringing the total number of Arcon houses on order up to 41,000. The additional 16,000 are in place of prefabricated houses of American manufacture, part of the order for which was cancelled when Lend-Lease ended.

"Good Heating" Exhibition.

An exhibition of solid smokeless fuel appliances for domestic heating services—"Good Heating for Every Home"—is planned to run during March at the Horticultural Hall, Vincent-square, London, S.W.1, and is being organised by the Solid Smokeless Fuels Federation. The Exhibition is being designed by Mr. Ian Jeffcott, L.R.I.B.A. Although intended primarily for housing authorities, architects, builders, heating engineers and all dealing with rehousing, it should interest everybody concerned with solid fuel and its utilisation. Every leading maker has been invited to participate.

PRESTRESSED CONCRETE

FROM A CORRESPONDENT.

WHEN an ordinary beam bends under loading, tension is produced on the under side and compression on the upper side. In a normal reinforced concrete beam, this compression is resisted by the compressive strength of the concrete (assisted or not by compression reinforcement); the whole of the tension is resisted by steel reinforcement. At normal working stresses, the small extension in this tensile reinforcement produces stresses in the surrounding concrete far in excess of the tensile strength of the latter. As a result hair cracks occur in the vicinity of the maximum stress. Although in most buildings such cracks may be unobjectionable, in exposed works they are often detrimental, and in all structures avoidance of cracking is desirable, especially if coupled with economy of material, and, in some cases, with a saving in cost.

If a condition can be produced in an unloaded reinforced concrete beam by which compression is induced in that part of the beam that is normally in tension, it is possible substantially to increase the load which the beam can carry without cracking. This induced condition is the principle of prestressing.

There is a number of methods of applying the prestress. In one such method the reinforcement is stretched by being put into a state of tension before being embedded in the concrete, the reaction being taken against the moulds. When the concrete has been placed and has hardened, it grips the prestressed reinforcement. The external force maintaining the initial tension in the latter is then relaxed. The steel endeavours to return to its original unstretched length, and in so doing induces a compression in the surrounding concrete, that is, in the bottom of the beam. A large residual tension remains in the reinforcement, and a small tensile stress is induced in the top of the beam. This is prestressing by virtue of the bond between the concrete and steel.

An alternative method of prestressing is for the unstrained tensile reinforcement to be embedded in the concrete, but prevented from bonding with the latter. When the concrete has hardened, a tension is induced in the reinforcement by external means, such as by jacks reacting against the ends of the actual beam, thereby producing a compression in the concrete surrounding the reinforcement in the lower part of the beam. A small tensile stress is produced in the upper part. In this respect the effects are the same as in the first method, but one difference is that in this second method the reinforcement still carries the initial prestressing force, which is maintained by mechanically anchoring the ends of the reinforcement in the stretched condition.

Whichever method of prestressing is used the effect upon loading the beam is to reduce the compression in the bottom of the beam, to increase the tension in the reinforcement, and to convert the tension in the top of the beam into a compression. The beam is so designed, and the prestressing force is so assessed, that under working loads the relaxation of the compression in the bottom of the beam is such that no tension is produced; thus no cracks occur at working loads.

Since the required prestressing force is comparatively high, the amount of steel necessary to transmit this force would be very large if ordinary mild steel were used, owing to the low yield point and the consequently limited stress that can be safely induced in such material. Therefore it is usual to employ for prestressed reinforcement a large number of wires of high ultimate tensile strength and high yield stress. The latter may be about 60 tons per sq. in. compared with mild steel at 16 tons per sq. in. Such steel can be stressed to upwards of six times as much as mild steel, and thus, for a given prestress, plus tension due to loading, less than 15 per cent. of the amount of mild steel is required.

This high steel stress has another very important advantage. As concrete matures, it shrinks. Also, when put into a permanent state of compression, the stress due to the latter tends to relax in the course of time due to the phenomena known as creep. Both these effects result in a progressive reduction of the prestress. This reduction, the optimum value of which can be quantitatively allowed for, is only a small percentage of the high stress induced in the prestressed wire reinforcement, but would be a serious proportion of the low stress associated with ordinary mild steel reinforcement.

In practice there are numerous variants of the foregoing principles, some of which involve non-prestressed steel used in combination with prestressed reinforcement. Commonly, the predetermined and measured amount of prestress is induced by jacks, turnbuckles, or other mechanical apparatus, with suitable means to ensure that each wire is subject to the same known degree of prestress. When the prestressing is done after maturity of the concrete, a number of wires is usually encased in a light metal sheath, which gives the desired condition of no bond with the surrounding concrete. Cement grout, or other protection, is ultimately injected into the sheath to prevent corrosion. When the initially prestressed wires are embedded in the concrete and their action depends on bonding with the latter, the wires are separated to ensure complete individual immersion in the concrete.

The practical procedure adopted in a given case depends upon the nature of the member or structure. Some form of prestressing was adopted in reinforced concrete construction as long ago as 1888, but at that date the application was crude, as data relating to the phenomena associated with concrete were not available. The current exact analyses and practical applications have been successfully employed over the last twenty years, but progress is continually being made in the statistical calculations, and improvements in the mechanical apparatus.

Although first applied to such obvious cases as cylindrical tanks, the principle of prestressing heavy beams and bridge girders has been carried to a high degree of efficiency. For such works definite economy is gained, especially for heavy loads and long spans. The principle has been adapted and extended to floor slab beams, and many other precast units normally subject to tensile stresses when in service. It is doubtful whether the application of prestressing to cast *in situ* structures such as building frames is yet economical, owing to the cost of the special equipment and heavy shuttering required to withstand the high prestressing forces.

Where prestressing is applicable, however, other worthwhile advantages, besides saving in cost, accrue. Freedom from cracking, and consequently higher resistance to the action of corrosive fumes, weather, and other deleterious influences, increased impermeability, reduced deflections, increased ratio of span-to-depth, saving in weight of steel up to 80 per cent., and reduction in dead weight up to 60 per cent., are attributes the desirability of which are obvious. Subsidiary factors include a marked increase in shear strength, which results in flanged sections being more economical than the conventional reinforced concrete beam profiles, and the ability of prestressed members to withstand serious over-loading without detrimental effects.

There is an extensive literature relating to the design and construction of prestressed concrete structures, and the following two recent references have been selected as suitable for readers who may wish to pursue the subject.

(1) "Prestressed Concrete; Some Recent Developments," by G. Magnel, M.I.Struct.E., "Concrete and Constructional Engineering," November and December, 1945, and January, 1946—a particularly lucid illustrated account of basic principles and modern practical application.

(2) "Fully and Partly Prestressed Reinforced Concrete," by P. W. Abeles; Journal of American Concrete Institute. January, 1945.—Contains a history and description of methods of prestressed concrete, and includes comprehensive design formulæ and a bibliography.

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OFFICIAL NOTIFICATION

Iron and Steel Products.

The Minister of Supply has made the Control of Iron and Steel (No. 46) Order, 1945 (which consolidates all previously subsisting Orders except the Scrap Orders and the No. 44 Order relating to the use of tinplates in the production of certain articles), and the Control of Bolts, Nuts, etc. (No. 9) Order, 1945, which came into operation on December 31 last. The main purpose of these Orders is to provide for higher maximum prices in relation to current costs of production. The basis price of pig iron is increased by £1 a ton. In general, the price increase on the main steel products is about 5 per cent. Copies of the Orders may be obtained from H.M. Stationery Office, York House, Kingsway, W.C.2, or through any bookseller.

THE SCOTTISH BUILDER

NEW BUILDINGS

DUMBARTON.—Dean of Guild Court granted permission to T.C. to proceed with plans for 122 houses at Stirling-rd. and Rounding-rd. area.

GLASGOW.—Corporation is to erect clinic at the Southern General hospital, for which the architect is Robert Bruce, Municipal-bldgs.

GLASGOW.—Plans in hand for alterations and additions for John Laird & Son, Ltd., Carstairs-st., at Swanston-st., for which the architects are George A. Boswell & Partners, 256, West George-st., Glasgow.

GLASGOW.—Plans in hand for reconstruction, alterations and additions for hotel at Great Western-ter., for which the architect is John Wilson, 46, Clobar-st., Glasgow.

FUTURE CONSTRUCTION

CONTRACTS OPEN

For some contracts still open, but not included in this list, see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

JANUARY 16.

†***Hertford R.D.C.**—8 houses at Datchworth. C., Council Offices, 20, Castle-st., Hertford. Dep. £3. Tenders by February 1.

†***Nottingham T.C.**—Superstructure of Turbine House at North Wilford Power Station. City E. and S. Dep. £2. Tenders by February 19.

†**Sedgley U.D.C.**—96 houses at Lower Gornal estate. Wm. M. Jones, A.M.I.C.E., S. Dep. £3 3s.

JANUARY 19.

†***Hatfield R.D.C.**—20 houses at Birchwood estate. C., Council Offices, 16, St. Albans-rd., Hatfield. Dep. £2 2s.

Kerrier R.D.C.—20 houses on 4 sites. C. R. Corfield and Son, Strand-chbrs., 9, Killigrew-st., Falmouth. Dep. £2 2s.

†***Wenlock T.C.**—24 houses at Hodgecroft. W. B. Bond, F.S.I., Colmore-chbrs., 3, Newhall-st., Birmingham. Tenders by February 4. Dep. £2 2s.

JANUARY 21.

Barmouth U.D.C.—(a) 26 houses, (b) roads and sewers at recreation ground. S. Dep. £5.

Clayton-le-Moors U.D.C.—8 bungalows at John-st. site. S. Dep. £2 2s.

Cookham R.D.C.—6 bungalows and 8 houses at New Lodge-rd., Fifield Bray. G. B. Wills, Architect, High-st., Marlow. Dep. £2 2s.

†***Isle of Ely C.C.**—Structural alterations and redecoration at the Baptist Hall, Haddenham, to form kitchen. R. D. Robson (A.), County A., County Hall, March. Dep. £2 2s.

†**Largs T.C.**—Work in various trades for 50 houses. R. R. King, T.C.

Littleborough U.D.C.—32 houses at Shore estate. G. F. Wild, E. and S. Dep. £2 2s. (cheques only).

Preston C.B.—688 houses at Ribbleton Hall estate. Granville Berry, A.M.Inst.C.E. B.S. Dep. £3 3s.

†**Rothesay T.C.**—Work in various trades for erection of 78 houses at Bush site. R. D. Whyte, T.C.

Salisbury T.C.—72 houses at The Drove, West Farnham. City E. Dep. £2 2s.

Selby U.D.C.—50 houses at Abbot's-rd. E. and S., 12, Park-st. Dep. £2 2s.

†***Southgate T.C.**—76 houses at Barrowell Green site. B.E. and S. Dep. £2 2s.

Tamworth R.D.C.—66 houses at Glascote and Wilnecote sites. H. N. Jepson, Architect, Midland Bank-chbrs., Nuneaton. Dep. £3 3s.

Woking U.D.C.—26 houses at 3 sites. H. P. Tame, A.M.Inst.C.E., Registered Architect, E. and S. Dep. £2 2s.

JANUARY 22.

***Brentford and Chiswick T.C.**—8 houses at Syon-la. estate, Isleworth. B.E. and S. Dep. £2 2s.

†**Helmsley R.D.C.**—(a) 17 houses at Ashdale-rd., (b) roads and sewers. H. L. Bates, C. Dep. £2 2s.

Southwick U.D.C.—12 houses at Ridgeway housing scheme. E. A. Coates, M.Inst.M.&Cy.E., E. and S. Dep. £3 3s.

Walsingham R.D.C.—90 houses on various sites. Housing Officer, 10, The Square, Fakenham. Dep. £2 2s.

JANUARY 22 (extended date).

Lewes T.C.—40 houses at Site 1a, Landport estate. C. T. Butler (L.), B.S. Dep. £2 2s.

JANUARY 23.

Alton R.D.C.—4 pairs of Swedish houses at Lower Froyle. C., 38, High-st. Dep. £10 10s.

Kingswood U.D.C.—75 houses at Woodstock and New Cheltenham-rd., Kingswood and Chunk-rd., Hanham. G. Fletcher (L.), Council Offices. Dep. £2 2s.

***Ross and Whitchurch R.D.C.**—34 houses at 7 sites. G. E. Hardy (L.), "Woodside," Ross-on-Wye. Dep. £2 2s.

†***Wolverton U.D.C.**—30 houses at Althorpe-cres. and Stanton-ave., New Bradwell. B. J. Cussons, C. Dep. £3 3s.

JANUARY 24.

***Caterham and Warlingham U.D.C.**—44 houses on 3 estates. E. and S.

Portsmouth T.C.—Repair and reconstruction of mass and reinforced concrete quay walls and incidental works at Camber. City E. Dep. £2 2s.

West Dean R.D.C.—12 houses at Yorkley Slade No. 1 site. H. F. Trew, Architect, Burleigh House, Nettleton-rd., Gloucester. Dep. £2 2s.

JANUARY 25.

Devizes T.C.—Conversion of Hilfworth House into 6 tenements. B.S.

***Wokingham R.D.C.**—Foundation work for 5 pairs Swedish houses and erection of 2 pair of brick houses. Chas. Smith and Sons (F. and R.), 164, Friar-st., Reading. Dep. £2 2s.

JANUARY 26.

Eccles T.C.—60 houses and 14 bungalows at Peel Green-rd. B.E. and S. Dep. £2 2s.

†***Leek U.D.C.**—10 houses at Albion-st., being first portion of programme of 264 houses. J. A. Gilchrist, F.S.I., E. and S. and Architect. Dep. £2 2s.

Wellington (Som.) U.D.C.—24 houses and 12 flats at Doctors' Meadow site in 2 contracts, Rockwell Green. E. T. Howard, Chartered Architect, 67, High-st., Wellington, Som.

JANUARY 28.

Devizes T.C.—12 houses at Brickley-la. site. B.S. Dep. £2 2s

Frome R.D.C.—46 houses at various sites. J. Rogers, Architect, Radstock, nr. Bath. Dep. £1 1s.

†***Ilford T.C.**—(a) 40 houses at Oaks-la.; (b) 10 houses at Colvin-gdns. B.E. and S. Dep. £5 5s. Tenders by February 8.

Pontefract T.C.—Construction of reinforced concrete-covered reservoir. B. and Water E. Dep. £3 3s.

Southport C.B.—84 houses at Site No. 3, Russell-rd. B.E. Dep. £2 2s.

JANUARY 29.

Shipley U.D.C.—50 houses on 2 estates. H. Dawson, Architect and S., Town Hall.

JANUARY 31.

Street U.D.C.—22 houses at 2 sites. N. H. N. Darby, Architect, Westminster Bank-chbrs., Taunton. Dep. £2 2s.

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Tyldesley U.D.C.—40 houses at Astley-st. site, No. 2. N. Chamberlain, F.S.I., E. and S. Dep. £3 3s.

***Warwick T.C.**—20 houses at Stratford-rd. housing scheme. R. Wormell, A.M.I.C.E., B.E. and S. Dep. £3 3s.

FEBRUARY 1.

***Southborough U.D.C.**—11 houses at Manor-rd. site. C., Council Offices. Dep. £2 2s. Plans seen at office of Howes and Jackman (FF.), 1, Verulam-bldgs., Grays Inn, W.C.1.

***Wood Green B.C.**—Adaptation of N.F.S. huts as Ten temporary dwellings at New-rd. B. E. and S. Dep. £1 1s.

FEBRUARY 2.

***Ashby-de-la-Zouch.**—(1) Roads and sewers at Heather and Ravenstone; (2) 32 houses at Heather and Ravenstone. Leonard Swanwick, M.Inst.R.A., 44, London-rd., Coalville. Dep. £2 2s.

***Newmarket R.D.C.**—42 houses at various sites. L. I. Cockerham (L.), Council Offices, Park-la., Newmarket. Dep. £3 3s.

Tavistock U.D.C.—28 houses, Crelake housing scheme No. 1. W. E. Colston, S. Dep. £5 5s.

FEBRUARY 4.

Stroud U.D.C.—24 houses at Ebley. E. and S. Dep. £2 2s.

***West Bridgford U.D.C.**—56 houses at Valley-rd. estate. E. and S. Dep. £2 2s.

FEBRUARY 16.

Kingsclere and Whitchurch R.D.C.—(1) 4 pairs houses at Ashmansworth; (2) 22 at Whitchurch; (3) 4 at Highclere. Mr. Henshaw (F.), Westminster Bank-chbrs., Andover. Dep. £1 1s.

NO DATE.

Downham R.D.C.—14 pairs houses at 3 sites. H. C. Hughes and Peter Bicknell, 1, Tunwell's-ct., Trumpington-st., Cambridge. Dep. £2 2s. (Documents ready on and after January 22.)

Whaley Bridge U.D.C.—20 houses on 2 estates. C. Dep. £2 2s.

MISCELLANEOUS

JANUARY 21.

Limehurst R.D.C.—Demolition and removal of 73 brick and concrete shelters. E. and S. Dep. £1 1s.

Tynemouth C.B.—Demolition of shelters, wardens' posts, communal shelters and static water tanks. B.S.

JANUARY 22.

Margate T.C.—Demolition of concrete reservoir and military pill boxes, etc. B.E.

JANUARY 28.

Eccles T.C.—Demolition and removal of brick and concrete shelters, etc. B.E. and S.

Walthamstow E.C.—Filling in and making good anti-tank trenches and fly-bomb crater at Salisbury Hall schools playfield. F. H. Heaven (A.), Old Monoux-bldg., High-st., Walthamstow, E.17.

JANUARY 31.

Tyldesley U.D.C.—Complete demolition and removal of shelters. E. and S. Dep. £1 1s.

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JANUARY 24.

Monmouthshire C.C.—County E. and S.

JANUARY 26.

Beotie C.B.—B.E. and S.

JANUARY 31.

Hunts C.C.—County S.

Lambeth B.C.—B.E. and S.

FEBRUARY 2.

Rainford U.D.C.—S.

Swansea C.B.—B.E. and S.

FEBRUARY 4.

Rhondda U.D.C.—E. and S.

FEBRUARY 9.

East Grinstead U.D.C.—E. and S.

ROADS, SEWERAGE AND WATER WORKS

JANUARY 21.

Caterham and Warlingham U.D.C.—Road widening and construction of sewers at Crewes-la.

York T.C.—Roads and sewers Carr housing estate. City E. and Architect. Dep. £1.

JANUARY 22.

Duncon T.C.—Roads and sewers at Ardenslate site. Burgh E. Dep. £1 1s.

Marlow U.D.C.—Roads and sewers, Scheme No. 1. S. Dep. £2 2s.

JANUARY 23.

Cheadle and Gatley U.D.C.—Roads and sewers, etc., at Oak-rd. and Councillor-la. site. Acting E. and S. Dep. £2 2s.

JANUARY 25.

Beverley T.C.—Roads and sewers at Riding Fields estate. B.E. and S. Dep. £2 2s.

JANUARY 26.

†***Leek U.D.C.**—Roads and sewers at Compton estate. E. and S. Dep. £2 2s.

Oswestry T.C.—Roads and sewers at Shrewsbury-rd. estate. B.S. Dep. £2 2s.

JANUARY 28.

Ongar R.D.C.—Roads and sewers at Chipping Ongar. S. Dep. £2 2s.

Tynemouth C.B.—Streets and sewers at Broadway "A" site, Cullercoats. B.S. Dep. £2 2s.

JANUARY 31.

Merthyr Tydfil C.B.—Reconstruction of main sewer. Sir Herbert Humphries and McDonald, Consulting E., 309, Birmingham-rd., Wylde Green, Birmingham. Dep. £5 5s.

FEBRUARY 1.

Mid-Glamorgan Water Board.—Provision and laying of 2,000 lin. yds. of 3 in. dia. and 650 lin. yds. of 6 in. dia. spun cast-iron pipes, etc. Thomas Morgan and Partners, Engineers, 23, Gelliwastad-rd., Pontypridd. Dep. £3 3s.

FEBRUARY 2.

Brighouse T.C.—Roads and sewers, Stoney-la. site. B.E. and S. Dep. £3 3s.

FEBRUARY 5.

Manley R.D.C.—Provision, laying and jointing of approximately 5,720 lin. yds. of 12 in. and 9 in. and 6 in. dia. sewers, together with manholes, pumping station, rising main, etc., at Rushwick and Upper Wick. Willcox, Raikes and Marshall, 33, St. Charles-st., Birmingham, 3. Dep. £5 5s.

FEBRUARY 12.

Aireborough U.D.C.—Roads and sewers at Haw-la. and Yeadon Haw. E. and S. Dep. £2 2s.

NO DATE.

Hitchin R.D.C.—Roads and sewers at Codicote. S. Dep. £2 2s.

PUBLIC APPOINTMENTS

*Full details of Public Appointments marked * are advertised elsewhere in this issue. Those marked † have been advertised in previous issues.*

JANUARY 17.

***Scunthorpe T.C.**—Building Inspector.

JANUARY 21.

†Beckenham T.C.—Temporary Architectural Assistant.

†Blackwell R.D.C.—Architectural Assistant.

***Bootle C.B.—(a) Chief Quantity Surveyor; (b) Quantity Surveyor; (c) Chief Building Inspector.**

†Fulham B.C. — Temporary Architectural Assistants.

***Rochester T.C.—Architectural Assistant.**

JANUARY 22.

***Guildford T.C.**—(a) Architectural Assistant; (2) Quantity Surveying Assistant.

***West Ham Municipal College.—Instructor in Brickwork.**

JANUARY 23.

***Coventry T.C.**—Clerk of Works.

***Coventry T.C.**—(1) Senior Quantity Surveyors; (2) Assistant Quantity Surveyors.

JANUARY 24.

***Chester T.C. — (a) Senior Engineering Assistant; (b) Senior Architectural Assistant.**

JANUARY 25.

†Admiralty Civil Engineer-in-Chief's Dept.—Designers and Detailers.

***Deptford T.C.**—(a) 2 second-class Engineering Assistants; (b) 1 second-class Engineering Assistant; (c) 1 third-class Engineering Assistant.

***Derbyshire C.C. — Senior Architectural Assistants.**

Leicester T.C.—Clerk of Works.

†Overseas Employment.—(a) Waterworks and Drainage Engineer, (b) General Engineer, Cawnpore Development Board.

***Surbiton T.C.**—Building Inspector.

JANUARY 26.

***Croydon C.B.**—Temporary Senior Surveyor.

†Glasgow T.C.—Civil Engineering Assistants, first and second class; Quantity Surveyors, first and second class.

***Mansfield Woodhouse U.D.C.**—Clerk of Works.

***Surrey C.C.—Architectural Assistant.**

***Surrey C.C.—Junior Architectural Assistant.**

***Welshpool T.C.**—Clerk of Works.

***Yeovil and District Joint Town Planning Committee.**—Junior Planning Assistant.

JANUARY 29.

***Overseas Employment.**—(a) Civil Engineers; (b) Sanitary Engineers for Govt. of Burma.

JANUARY 31.

***Edmonton T.C.**—Building Works Manager.

***Edmonton T.C.**—Builders' Clerk.

FEBRUARY 8.

***Luton T.C.**—(1) Chief Planning Assistant; (2) Estates and Maintenance Assistant; (3) Architectural Assistant; (4) Architectural Assistant.

FEBRUARY 10.

***Control Commission for Germany.**—(a) Civil Engineer experienced in harbour and dock works; (b) Civil Engineers for Roads Branch (Highways and Bridges).

FEBRUARY 11.

†University of Liverpool T.C.—Full-time of Ungraded Lecturer and Studio Instructor at School of Architecture.

FEBRUARY 16.

***Ministry of Town and Country Planning.**—Regional Planning Officer.

NO DATE.

***Primley and Camberley U.D.C.**—Clerk of Works.

***St. Peter's Approved School, Gainford, nr. Darlington.**—Resident Building Instructor.

***University of Cambridge Estate Management Branch.**—Architectural or Building Surveying Assistant.

GENERAL BUILDING WORK

Alfreton.—Derbyshire E.C. propose dining-hall, kitchen, etc., at Swanwick Hall Grammar school, at £6,630.

Blackburn.—T.C. propose dining-hall, structural alterations and repairs at Queen's Park Hospital, at £12,500.

Belden.—U.D.C. to erect 150 houses. Plans by the S.

Bramhall.—Cheshire E.C. propose County school.

Bromsgrove.—U.D.C. approved cinema at rear of The Strand, for Essanbee, Ltd. Plans by Harold S. Scott (A.), King's Court, 115, Colmore-row, Birmingham.

Burton-on-Trent.—T.C. propose 350 houses at Waterside site.

Chadderton.—U.D.C. approved welfare unit at Mona Mills, Fields New-rd., Hollinswood, for Mona Mills (1920), Ltd. Plans by Taylor, Roberts & Bowman (FF.), 10, Clegg-st., Oldham.

Chester.—R.D.C. appointed W. A. Eden (A.), of Liverpool, to prepare plans for development of land as "neighbourhood unit" at Upton.

Chesterfield.—E.C. propose extensions at Derby-rd. Municipal school, at £17,230.—T.C. approved warehouse, Pottery-la., for Pearson & Co., Ltd.

Corby.—William Green & Son, Ltd., boot factors, Rushden, propose factory.

Darlington.—Ellis Bros. (Tailors), Ltd., propose factory.

Inco.—U.D.C. propose 158 houses off Petticoat-la.

Leeds.—Brotherton & Co., Ltd., ammonia distillers and chemical manufacturers, propose to adapt St. John's Dyeworks, Headingley, for research laboratory. S. & N. Shute, Ltd., builders, 11, Delamere-st., propose 200 houses at Roundhay Park estate.

Longton.—Hospital Board of Management propose extensions, at £80,000/£100,000.

Manchester.—T.C. approved: Miners' canteen, Hayke-st., Bradford, for Miners' Welfare Commission. W. H. Johnson & Sons, architects, 27, Oldham-rd., Miles Platting.

Matlock.—Derbyshire E.C. propose conversion of Rockside Hydro into Training College for Teachers, at £30,000.

Menai Bridge.—E.C. propose Secondary modern school.

Middlewich.—U.D.C. propose development of land for 120 houses, ambulance garage, public conveniences, etc.

Nantwich.—E.C. propose erection of County Grammar school.

Newcastle-under-Lyme.—T.C. propose community centre at Westlands estate.

Penketh.—Lancashire E.C. propose completion of Great Sankey Grammar school, at £18,800. Plans by Quiggin & Gee (FF.), North House, North John-st., Liverpool 2.

Salford.—E.C. propose additions at Langworthy-rd. school; erection of High school for Girls at Kersal Farm estate, Broughton.—T.C. propose reconditioning Pendleton swimming baths.

Seaham.—U.D.C. to erect 100 houses at Steward-st. area.

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South Shields.—T.C. propose 910 houses at £1,005,000.

Southport.—E.C. propose additional classrooms at Birkdale Modern Secondary school, at £4,694.

Wakefield.—T.C. propose 190 houses at Flanshaw estate, at £212,270.

Wallasey.—E.C. propose kitchen and dining-room at Poulton school site.

Warrington.—T.C. propose 175 permanent houses at Capesthorne-rd. site, Orford.

TENDERS

* Denotes *accepted*.
† Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modification*.
¶ Denotes *accepted by H.M. Government departments*.

Bridgwater.—78 houses at Hamp housing estate, for T.C. R. A. Watson, M.I.M. & Cy.E., M.R.S.I., A.I.W.E. (L.), B.E.: *Ardwick Building & Engineering Co., 29, Chronicle-bldgs., 74, Corporation-st., Manchester 4, £78,596 10s.

Brynmawr.—34 houses with site and road works at Twyncynghordy estate, for U.D.C. P. I. Davies, "The Croft," Victoria, Ebbw Vale, Mon, architect: *Stephen D. Bevan, Penylan, Beaufort, 34 houses, £36,992; roads and water mains, £1,472 (subject to M.H. approval).

¶London (Air Ministry).—List of contracts to value of £500 or over for week ended January 5:—*General maintenance work*: Galbraith Bros., Ltd., London, W.C.1; A. Monk & Co., Ltd., Warrington; F. Hossack & Son, Sleaford; Lewis & Watters, Leamington Spa. *Heating and hot water installation*: Z. D. Berry & Sons, Ltd., London, S.W.1; Norris Warming Co., London, W.C.1. *Installation work*: G. N. Haden & Sons, Ltd., London, W.C.1. *Electrical work*: East Anglian Electric Supply Co., Ltd., Stowmarket, Suffolk.

¶London (M.O.W.).—Contracts placed by M.O.W. during week ending December 20:—*Berks*: Wantage U.D.C.1, Aluminium houses, T. H. Kingerlee & Sons, 35a, Queen-st., Oxford; *Caernarvonshire*: Llandudno 1, Arcon houses, Frank Tyldesley, Victoria-bldgs., Victoria-st., Llandudno. *Devon*: Exeter, Dining-room and kitchen at St. Luke's College, Heavitree-rd., Thomas Vanstone & Sons, 240, Union-st., Torquay; Plymouth, U.S.A. houses, J. Garrett & Son, Ltd., 34, Tavistock-rd., Plymouth. *Dorsetshire*: Wareham B.C. 1, Universal houses, G. J. Furneaux, Ltd., 251, Barrack-rd., Christchurch, Hants. *Essex*: Dagenham B.C.3, Seco houses, F. R. Hipperson & Son, Ltd., 6, Broad-st.-pl., E.C.2; Braintree, kitchen at Witham Senior school, E. C. P. Brand, Mount House Works, Braintree. *Gloucs*: Bristol, Corporation Area, housing sites, Hiles & Son, Pritchard-st., Bristol. *Hampshire*: Farnborough, A.1 Hangar at R.A.E., Farnborough, Fleming Bros., 49, Bath-st., Glasgow; foundations for experimental landing sites at R.A.E., Farnborough, G. Percy Trentham, Ltd., Long-la., Hillingdon; Chichester City 1A, Seco houses, John Hunt, Ltd., South Wharf, Cleveland-rd., Gosport. *Herts*: Chorley Wood U.D.C., Housing sites, Franks Harris Bros., Ltd., Station Approach, Guildford, Surrey.

Kent: Dartford No. 2A, U.S.A. houses, Gough Cooper & Co., Ltd., Wilmington House, Church Hill, Wilmington; Gravesend B.C. 1A, U.S.A. houses, Gough Cooper & Co., Ltd., Wilmington House, Church Hill, Wilmington; Dartford R.D.C. 3A, U.S.A. houses, Gough Cooper & Co., Ltd., Wilmington House, Church Hill, Wilmington. *Middx*: Uxbridge U.D.C. 1, Arcon houses, W. S. Try, Ltd., Cowley, Uxbridge; Southall B.C. 1, Arcon houses, Holland and Hannen & Cubitts, Ltd., 1, Queen Anne's Gate, S.W.1; Wembley B.C. II, Arcon houses, Harry Neal, Ltd., 117, Baker-st., W.1. *Midlothian*: Edinburgh, Site works and foundations for aluminium houses, John Crow & Sons, 37, Haddington-pl., Edinburgh. *Monmouthshire*: Tredegar 1, Arcon houses, Wm. Cowlin, Ltd., Caerphilly-rd., Whitchurch-rd., Cardiff. *Norfolk*: Wells next the Sea U.D.C.1, Seco houses, Walter Lawrence & Sons, Ltd., Sun-st., Finsbury, E.C.2. *Roxburgh*: St. Boswells and Newton St. Boswells, site works and Uni-Seco houses, Walter Bell & Sons, Ltd., 1, Abbotsford-gr., Kelso. *Somersetshire*: Keynsham 1, Seco houses, Henry Kent, Ltd., 51, Beacon-rd., Lewisham, S.E.13. *Staffs*: Smethwick 2, Arcon houses, W. B. & F. T. Archer, Holyhead Works, Rookery-rd., Handsworth, Birmingham; Darlaston 1, Tarran houses, East Midland Construction Co., Lower Green, Tipton; Bilston Area B.C., housing sites, Wilson Lovatt & Sons, Ltd., Clarence-st., Wolverhampton. *Sussex*: Shoreham-by-Sea, U.D.C. 1, Seco houses, Ringmer Building Works, Ltd., Ringmer, Lewes; Seaford U.D.C. 1, Seco houses, Ringmer Building Works, Ltd., Ringmer, Lewes. *Worcs*: Kidderminster, adaptations and alterations at M/E Training College, Shenstone hostel, C. Green & Sons, 132, Monument-rd., Birmingham. *Yorks*: Wetherby R.D.C., Aluminium houses, Walter G. Birch (Harrogate), Ltd., 33, Springfield-av., Harrogate; Pudsey Borough 1, Tarran houses, Harold Hirst & Sons, Bradford-rd., Birkenshaw, nr. Bradford.

¶London (M.O.W.).—Contracts placed by M.O.W. during week ending December 27:—*London*: Queen Victoria-st., Demolition work at Faraday-bldgs., George Wimpey & Co., Ltd.,

Tilehouse-la., Denham, Uxbridge; Greenwich, 8eco houses, Henry Kent (Builders), Ltd., 51, Beacon-rd., S.E.13. *Ches*: Marple U.D.C. Area, Housing sites, Milestone Construction Co., Ltd., 28, Park-row, Nottingham; Chester 2A, Aluminium houses, J. W. Flather, Ltd., Bleak-house, Ellesmere Port. *Durham*: Hartlepool B.C. 1, Tarran houses, T. M. Stonehouse, Ltd., Osborne-rd., West Hartlepool; Hartlepool B.C. 2, Tarran houses, Snowdon Bros., Belford-rd., Sunderland; West Hartlepool, Painting U.S.A. houses, Alfred Bagnall & Son, 7, Market-st., Shipley, Yorks. *East Lothian*: North Berwick (Clockbridge), Site works and Tarran houses, Wm. Brown, Main-st., Ormiston.

Hampshire: Havant and Waterloo U.D.C. 1, Universal houses, Johnson & Sons (Liphook), Ltd., The-avenue, Liphook. *Kent*: Swanscombe U.D.C. Area, Housing sites, Chittenden & Simmons, Ltd., Ditton-pl., Larkfield, Maidstone. *Lancs*: Darwen B.C. Area, Housing sites, A. Brett (Contractors), Ltd., Longbridge-rd., Grimsargh; Radcliffe, Kitchen at Bury-st., E. Marshall & Sons, Ltd., Stamford Saw Mills, Cockbrooke, Ashton-under-Lyne; Bolton 1, Aluminium houses, John Tinline, Ltd., Parker-st. Saw Mills, Bury. *Northants*: Peterborough C. B. 4, Spooner houses, J. Chapman & Sons, Ltd., Knighton Junction Works, Welford-rd., Leicester. *Selkirk*: Philiphaugh school, Construction of canteen, kitchen and dining-room, Murray & Burrell, Park-st., Galashiels. *Surrey*: Chertsey, Works as instructed at F.V.P.E., Chertsey, Speirs, Ltd., 66, Victoria-st., S.W.1.

¶**London (War Dept.).**—Works contracts placed by War Dept. for week ended December 29:—*Yorks*: Miscellaneous work, A. Clifford Green, Ltd., Wakefield; Wm. Johnson & Sons (Contractor), Ltd., Wombwell. *Shropshire*: Miscellaneous work, E. M. Minshall, Market Drayton.

Newcastle-on-Tyne.—36 houses at Silver Lonnen. H. A. MacKenzie, 13, Mosley-st., Newcastle, architect: *W. H. Oliver, Bolbec-rd., Newcastle-on-Tyne.—Alterations to customs office for Tyne Improvement Commission. Marshall & Tweedy, Grainger House, Blackett-st., Newcastle, architects: *B. Peel, Ltd., East Mill Works, North Shields (cost about £6,000).

Rotherham.—100 houses, for T.C.: *O. Weaver & Sons, Ltd., £983 per house.

South Shields.—150 houses, for T.C.: *Gustavus Bailey, Ltd., King-st., South Shields.

Southgate.—50 houses at Barrowell-green, for T.C.: *Lea Valley Demolition & Excavation Co., £54,802.

Stoke Newington.—90 dwellings at Hawkesley-rd. site, for T.C.: *Wm. Moss & Sons, Ltd., £107,710 (subject to M.H. & L.C.C. approval).

Wantage.—42 houses, for R.D.C. J. C. Bagnall, M.I.S.E., E. and S., Council Offices: *Gilmores, Langley, Bucks, £8,700 (8 at Childrey); *J. P. Barrett & Sons, West Hanney, Wantage, £16,230 (12 at Hanney); *Gilmores, £4,000 (4 at Hendred); *Collett & Rogers, Boars Hill, Oxford, £21,857 (18 at Harwell).

Welshpool.—36 houses at Bronybuckley, for T.C. Capt. W. M. Evans, P.A.S.I., M.I.M. & Cy.E., B.S.: *W. S. Brocklebank, Ltd., Birkenhead, £38,276.

West Bromwich.—52 houses, Harvills Hawthorn estate, for C.B. J. G. Jefferson, B.E. & S.: *Edgar Crowder, Ltd., South-rd., Handsworth, Birmingham 19, £56,752.

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